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The Archibald Watson Memorial Lecture.[1]

SOME DOCTORS IN FAMOUS NOVELS AND A FAMOUS PLAY.

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I WISH to thank the President and Committee of The Royal Australasian College of Physicians for having done me the honour of inviting me to deliver the Archibald Watson Memorial lecture for 1957. I had no personal knowledge of Professor Watson, but of course I was well aware, as was every other medical student in Australia, of the legends that surrounded his name.

This lecture has to do with doctors as they appeared to some famous novelists.

A friend of mine is in the habit of saying that, on retiring at night, he frequently thanks heaven for the great novelists. Many of us, recalling happy hours spent with novels, would wish to join him in his thanks.

[1] Delivered at a meeting of The Royal Australasian College of Physicians in Hobart on October 4, 1957.

Novels are mainly read for entertainment, of course, and if a novel fails to entertain it can hardly be considered a good one. However, from another point of view, a novel is a highly interesting social document, particularly so if the author describes characters and scenes with which he is familiar. A good novel represents social history come to life. It is proposed to examine certain famous novels and one play from this point of view, and to describe the doctors who appear in them.

So far as it is possible, the authors and their characters will be allowed to speak for themselves.

Jane Austen, 1775 to 1817.

Mr. Perry.

Jane Austen was the daughter of a country clergyman. Her novels describe upper middle class life in Hampshire and the neighbouring counties. She was a realist, and she had an extraordinary power of turning the events of everyday life into narratives of absorbing interest.

Mr. Perry, who appears in "Emma", was the first well-drawn doctor to appear in an English novel. Jane Austen suffered from and died of phthisis. She must therefore have known doctors well. The word "gentle" is sometimes applied to her, but when the occasion called for it she was the very reverse of gentle. Nobody could be more scathing. If she thought that people were foolish, pompous or consequential, she described their failings without reserve. It is a great relief, therefore, to find that the first doctor to be described by an English

novelist is dealt with sympathetically. The novel is of great interest also inasmuch as it fixes the status of the apothecary. At that time most of the English villages were served by apothecaries or by Licentiates of the Society of Apothecaries. Mr. Perry was an apothecary. Apothecaries were looked upon by the medical profession as being somewhat inferior in status. However, in "Emma", Mr. Perry is regarded as an ordinary doctor. He is only one of the minor characters, but he forms an important part of the background of Highbury life, which is vividly described. He is referred to again and again throughout the book, and always with affection and respect. Indeed, it is obvious that the village is proud of its doctor.

Altogether, Mr. Perry is a very satisfactory "first appearance".

Charles Dickens, 1812 to 1870.

Dickens was born in Portsmouth. At the time of his birth, his father, the original of Mr. Micawber, a man constantly in debt and difficulty, for whom nothing ever "turned up", was a dockyard clerk. The family removed to London when Dickens was a small boy. Their fortunes varied from comparative prosperity to direst poverty. As a young man, Dickens learned shorthand and became a Parliamentary reporter. His first book, "Sketches by Boz", was published in 1836. In the same year he began to write "Pickwick". This book is of great importance to the present study, as it contains the brilliant description of the two medical students from Guy's Hospital, Mr. Benjamin Allen and Mr. Bob Sawyer. Bob Sawyer has become the patron saint of gay and irresponsible medical students.

Mr. Benjamin Allen and Mr. Bob Sawyer.

At the time of their appearance, Mr. Pickwick was staying in the country with Mr. Wardle. Sam Weller awoke him with the news that there were a "couple of sawbones" downstairs. When Mr. Pickwick had been made to understand that these were two medical students, he said: "I am glad of it. They are fine fellows; very fine fellows; with judgments matured by observation and reflection; tastes refined by reading and study."

Sam points out that they were both smoking cigars and that one had his legs on the table and was drinking brandy whilst the other had a barrel of oysters between his knees. Mr. Pickwick considered these to be the "eccentricities of genius". However, when he descended to breakfast he did not find the appearance of the students very reassuring. The following is the description of Bob Sawyer.

> Mr. Bob Sawyer, who was habited in a coarse blue coat, which, without being either a great-coat or a surtout, partook of the nature and qualities of both, had about him that sort of slovenly smartness, and swaggering gait, which is peculiar to young gentlemen who smoke in the streets by day, shout and scream in the same by night, call waiters by their christian names, and do other various acts and deeds of an equally facetious description. He wore a pair of plaid trousers, and a large rough double-breasted waistcoat; out of doors, he carried a thick stick with a big top. He eschewed gloves, and looked upon the whole, something like a dissipated Robinson Crusoe.

Mr. Pickwick is shown as gradualy warming up to the students and particularly to Bob Sawyer. Before the party broke up, Bob Sawyer invited Mr. Pickwick and his friends to his lodgings in Lant Street, The Borough, near Guy's Hospital. This party was a failure. Bob had not been able to pay his rent. His landlady, Mrs. Raddle, revenges herself by first of all refusing to produce hot water for the brandy and then later, when conviviality was just about to appear, by loudly calling on the company to make less noise. Mr. Pickwick and his friends had to sneak quietly away.

A little later in the story, Bob Sawyer succeeds in passing his examinations and sets up in practice in Bristol, where he is discovered by Mr. Winkle. The following is the famous description of his method of building up a practice. Bob is addressing his messenger boy:

> "Did you leave all the medicine?"
>
> "Yes, sir."
>
> "The powders for the child, at the large house with the new family, and the pills to be taken four times a day at the ill-tempered old gentleman's with the gouty leg?"
>
> "Yes, sir."
>
> "Then shut the door, and mind the shop."
>
> "Come," said Mr. Winkle, as the boy retired, "things are not quite so bad as you would have me believe, either. There is some medicine to be sent out."
>
> Mr. Bob Sawyer peeped into the shop to see that no stranger was within hearing, and leaning forward to Mr. Winkle, said in a low tone.
>
> "He leaves it all at the wrong houses."
>
> Mr. Winkle looked perplexed, and Bob Sawyer and his friend laughed.
>
> "Don't you see?" said Bob. "He goes up to a house, rings the area bell, pokes a packet of medicine without a direction into the servant's hand, and walks off. Servant takes it into the dining-parlour; master opens it, and reads the label: 'Draught to be taken at bedtime—pills as before—lotion as usual—the powders. From Sawyer's, late Nockemorf's. Physicians' prescriptions carefully prepared', and all the rest of it. Shows it to his wife—she reads the label; it goes down to the servants; they read the label. Next day, boy calls: "very sorry—his mistake—immense business—great many parcels to deliver—Mr. Sawyer's compliments—late Nockemorf." The name gets known, and that's the thing, my boy, in the medical way. Bless your heart, old fellow, its better than all the advertising in the world. We have got one four-ounce bottle that's been to half the houses in Bristol, and hasn't done yet."
>
> "Dear me, I see," observed Mr. Winkle; "what an excellent plan."
>
> "Oh, Ben and I have hit upon a dozen such," replied Bob Sawyer, with great glee. "The lamplighter has eighteenpence a week to pull the night-bell for ten minutes every time he comes round; and my boy always rushes into church, just before the psalms, when the people have got nothing to do but look about 'em, and calls me out, with horror and dismay depicted on his countenance. 'Bless my soul,' everybody says, 'somebody taken suddenly ill. Sawyer, late Nockemorf, sent for. What a business that young man has!'"

It is well known that medical students are very liable to outbursts of gaiety and irresponsibility. These outbursts usually end within a year or two of graduation. However, when the story ends Mr. Bob Sawyer is still as gay and irresponsible as ever.

Mr. Jobling.

Mr. Jobling appears in "Martin Chuzzlewit" (1843). He was a general practitioner, who lived and practised in the "City" of London. He was a man who possessed little knowledge of medicine, but who had an immense power of making it appear that he did. He thoroughly understood the art of being impressive. In many ways there is a great similarity between Doctor Jobling and Sir Blomfield Bonington in Shaw's "The Doctor's Dilemma", which will be examined later. There is one great difference, however. One feels that Sir Blomfield would be the soul of honour, whereas Dr. Jobling was thoroughly unscrupulous. The following extract deals with his relationship to the bogus Anglo-Bengalee Insurance Company.

> In certain quarters of the City and its neighbourhood Mr. Jobling was, as we have already seen in some measure, a very popular character. He had a portentously sagacious chin, and a pompous voice, with a rich huskiness in some of its tones that went directly to the heart, like a ray of light shining through the ruddy medium of choice old burgundy. His neckerchief and shirt-frill were ever of the whitest, his clothes of the blackest and sleekest, his gold watch chain of the heaviest, and his seals of the largest. His boots, which were always of the brightest, creaked as he walked. Perhaps he could shake his head, rub his hands, or warm himself before a fire, better than any man alive; and he had a peculiar way of smacking his

lips and saying, "Ah!" at intervals while patients detailed their symptoms, which inspired great confidence.

Jobling was for many reasons, one of which was because his connexion lay principally among tradesmen and their families, exactly the sort of person whom the Anglo-Bengalee Company wanted for a medical officer. But Jobling was far too knowing to connect himself with the company with any closer ties than as a paid (and well paid) functionary, or to allow his connexion to be misunderstood abroad, if he could help it. Hence he always stated the case to an inquiring patient, after the following manner.

"Why, my dear sir, with regard to the Anglo-Bengalee, my information, you see, is limited: very limited. I am the medical officer, in consideration of a certain monthly payment. The labourer is worthy of his hire; Bis dat qui cito dat"—("Classical scholar, Jobling!" thinks the patient, "well-read man!")—"and I receive it regularly. Therefore I am bound, so far as my own knowledge goes, to speak well of the establishment." "If you put any questions to me, my dear friend", says the doctor, "touching the responsibility or capital of the company, there I am at fault; for I have no head for figures, and not being a shareholder, am delicate of showing any curiosity whatever on the subject. Delicacy—your amiable lady will agree with me I am sure—should be one of the first characteristics of a medical man." "Very good, my dear sir, so the matter stands. You don't know Mr. Montague? I'm sorry for it. A remarkably handsome man, and quite the gentleman in every respect. Property, I am told, in India. House, and everything belonging to him, beautiful. Costly furniture on the most elegant and lavish scale. The pictures, which even in an anatomical point of view, are per-fection. In case you should ever think of doing anything with the company, I'll pass you, you may depend upon it. I can conscientiously report you a healthy subject. If I understand any man's constitution, it is yours; and this little indisposition has done him more good, ma'am" says the doctor, turning to the patient's wife, "than if he had swallowed the contents of half the nonsensical bottles in my surgery. For they are nonsense—to tell the honest truth, one half of them are nonsense—compared with such a constitution as his!"

The following conversation takes place in the board room the next day.

"Commission to you, doctor, on four new policies, and a loan this morning, eh?" said Crimple, looking, when they had finished lunch, over some papers brought in by the porter. "Well done!"

"Jobling, my dear friend," said Tigg, "long life to you."

"No, no. Nonsense. Upon my word I've no right to draw the commission", said the doctor, "I haven't really. It's picking your pocket. I don't recommend anybody here. I only say what I know. My patients ask me what I know, and I tell 'em what I know. Nothing else. Caution is my weak side, that's the truth; and always was from a boy. That is", said the doctor, filling his glass, "caution on behalf of other people. Whether I would repose confidence in this company myself, if I had not been paying money elsewhere for many years—that's quite another question."

Other Dickens's Doctors.

Dickens described two other doctors, Doctor Slammer, a pompous army doctor, in "Pickwick Papers", and Dr. Chillip, an obstetrician who brought David Copperfield into the world.

Thackeray, 1811 to 1863.

Dr. Brand Firmin.

Dr. Firmin appears in "The Adventures of Philip". He was a fashionable doctor practising in London, and he was a bigamist, a forger and a thief. This novel is a bitter disappointment. When he wrote it, Thackeray was nearing the end of his life. He had just started the "Cornhill Magazine," and "Philip" appeared in it as a serial. In "Vanity Fair" one feels that Thackeray was living with his characters, day by day and week by week. In "Philip" he is obviously improvising. Incidents and scenes are rehashed from previous novels. There is no real Dr. Firmin; his character alters from chapter to chapter, and there is not the slightest interest in his villainy. He is mentioned simply to place on record Thackeray's failure in the only full-length picture of a doctor he attempted.

Mrs. Gaskell, 1810 to 1865.

Mr. Gibson.

Mrs. Gaskell was the friend and biographer of Charlotte Bronte. Her range was much the same as that of Jane Austen. She was once regarded as a minor novelist, but "Cranford", "Mary Barton" and particularly "Wives and Daughters" are now regarded as outstanding novels.

The last novel, "Wives and Daughters", is a key one as far as the present study is concerned, as the plot is centred on the household of a country doctor, Mr. Gibson, and his day-to-day life is described in detail. Not only is Mr. Gibson perhaps the best drawn doctor, but he is also one of the best drawn male characters in English literature. As far as his attitude to his work and his patients is concerned, Gibson could be held up as a model. As is the case with most men of strong character, he had certain strongly marked faults. He was too intolerant and too little inclined to suffer fools, but his patients saw only devotion, kindness and skill.

The novel is noteworthy inasmuch as it throws considerable light on the old system of apprenticeship.

Mr. Gibson kept three servants; Betty, a cook, and a girl who was supposed to be housemaid, but who was under both the elder two, and had a pretty life of it in consequence. Three servants would not have been required if it had not been Mr. Gibson's habit, as it had been Mr. Hall's before him, to take two "pupils" as they were called in the genteel language of Hollingford, "apprentices" as they were in fact—being bound by indentures, and paying a handsome premium to learn their business. They lived in the house, and occupied an uncomfortable, ambiguous, or, as Miss Browning called it with some truth, "amphibious" position. They had their meals with Mr. Gibson and Molly, and were felt to be terribly in the way; Mr. Gibson not being a man who could make conversation, and hating the duty of talking under restraint. Yet something within him made him wince, as if his duties were not rightly performed, when, as the cloth was drawn, the two awkward lads rose up with joyful alacrity, gave him a nod, which was to be interpreted as a bow, knocked against each other in their endeavours to get out of the dining room quickly; and then might be heard dashing along a passage which led to the surgery, choking with half-suppressed laughter. Yet the annoyance he felt at this dull sense of imperfectly fulfilled duties only made his sarcasm on their inefficiency, or stupidity, or ill manners, more bitter than before.

Beyond direct professional instruction, he did not know what to do with the succession of pairs of young men, whose mission seemed to be, to be plagued by their master consciously, and to plague him unconsciously. Once or twice Mr. Gibson had declined taking a fresh pupil, in the hopes of shaking himself free from the incubus, but his reputation as a clever surgeon had spread so rapidly that his fees which he had thought prohibitory, were willingly paid, in order that the young man might make a start in life, with the prestige of having been a pupil of Gibson of Hollingford.

It is part of the plot that one of the apprentices should fall in love with Mr. Gibson's daughter, Molly. Mr. Gibson would not allow him to declare himself, as he thought both parties were too young. The incident made him take thought about the future possibilities of his daughter's marriage. Although he attended the nobility and gentry in the neighbourhood and was received as an equal by them, he knew well that they would not regard a doctor's daughter as a suitable match for their sons. Molly was very friendly with Squire Hamley's family, but the squire made it very plain that he wanted no love-making between Molly and his two sons. In the end, after many troubles, poor Squire Hamley saw very clearly that character counted for more than birth, and he begged his remaining son Roger to marry Molly. However, his son had already fallen in love with Molly, and so Mr. Gibson's main concern in life was settled.

Anthony Trollope, 1815 to 1882.

Anthony Trollope is now fairly widely read in both England and Australia. However, there was a long period during which he was completely forgotten. In the early years of this century his name was never mentioned, extracts from his works were not included in school anthologies, and to all intents and purposes his work was dead. His return to popularity was, to a great extent, due to an American, A. Edward Newton, who in "Amenities of Book Collecting", 1918, called attention to his excellence.

The following story will appeal to any book collectors who may be present. The Launceston Public Library is an old established library, and it contains many original editions. Many years ago the library advertised that it would, on a certain date, sell a number of out-of-date books at threepence a volume. I was early on the spot. Many tables were searched, but nothing of interest was found. I was about to turn away, disappointed, when, on the last table, I found a long row of Trollope's novels. The volumes were old, worn and repaired, but many of them were first editions, with Millais's illustrations. I guessed that they had been put out by a junior member of the staff, but did not think it my duty to inquire. Just as I was about to remove them, who should come in but the late Dr. G. H. Hogg, a member of the library board. He sized the situation up quickly, and in a few minutes the "Trollopes" were being returned to their shelves. Since then I have had the greatest possible pleasure from those old volumes (taken out singly and with the library stamp on them).

Doctor Thorne.

Although Doctor Thorne, in the novel of the same name, dominates the book to some extent, the tale is essentially a love story and a satire on certain money-loving aristocrats. Old Doctor Thorne has been living in Greshambury for some years. He has long been intimate with Squire Gresham, who is the first commoner in the country, and he has been the family doctor. His beautiful niece, Mary Thorne, has been more or less brought up with the Gresham children. Frank, the heir, who is nearly of age, has fallen in love with Mary. The squire's wife, Lady Arabella, is the sister of Earl de Courcy. The de Courcy taste for magnificence has led the Squire into extravagance, and the estate is heavily mortgaged. It is an article of the de Courcy creed that Frank should marry "money". However, all efforts fail to shake his determination to marry Mary. The de Courcys thereupon "wash their hands" of the affair. Mary and her uncle are excommunicated by Lady Arabella. However, there is a mystery about Mary's birth. It turns out that she is the illegitimate daughter of Dr. Thorne's dead brother, and that by virtue of her birth, she is the heiress of an enormous fortune. Everything is changed in an instant. Lady Arabella welcomes Mary back with open arms. The de Courcy family announce their intention of attending the wedding in force—even the Earl and Countess will come—and they are profuse in their praise of Frank's conduct.

The medical interest of the novel lies in the relationship of Dr. Thorne to his colleagues in the neighbouring towns of Barchester and Silverbridge. He was at loggerheads with them. Twenty years previously he had "squatted" at the village of Greshambury. This in itself was a cause of offence. More than that, he had added the business of dispensing apothecary to that of physician.

> Then also, Dr. Thorne, though a graduated physician, though entitled beyond all dispute to call himself doctor, according to all the laws of all the colleges, made it known to the East Barsetshire world, very soon after he had seated himself at Greshambury, that his rate of pay was to be seven-and-sixpence a visit within a circuit of five miles, with a proportionally increased charge at proportionally increased distances. Now there was something low, mean, unprofessional, and democratic in this; so, at least, said the children of Æsculapius gathered together in conclave at Barchester. In the first place, it showed that this Thorne was always thinking of his money, like an apothecary, as he was; whereas, it would have behoved him, as a physician, had he had the feelings of a physician under his hat, to have regarded his own pursuits in a purely philosophical spirit, and to have taken any gain which might have accrued as an accidental adjunct to his station in life. A physician should take his fee without letting his left hand know what his right hand is doing; it should be taken without a thought, without a look, without a move of the facial muscles; the true physician should hardly be aware that the last friendly grasp of the hand had been made more precious by the touch of gold. Whereas, that fellow Thorne would lug out half a crown from his breeches pocket and give it in change for a ten shilling piece. And then it was clear that this man had no appreciation of the dignity of a learned profession. He might constantly be seen compounding medicines in the shop, at the left hand of his front door; not making experiments philosophically in materia medica for the benefit of coming ages—which, if he did, he should have done in the seclusion of his study far from profane eyes—but the positively putting together common powders for rural bowels, or spreading vulgar ointments for agricultural ailments.
>
> A man of this sort was not fit society for Dr. Fillgrave of Barchester. That must be admitted. And yet he had been found to be fit society for the old squire of Greshamsbury, whose shoe-ribbons Dr. Fillgrave would not have objected to tie; so high did the old squire stand in the county just previous to his death.

Dr. Fillgrave, who had certainly the most respectable connexion in the country, who had a reputation to maintain and who was accustomed to meet, on almost equal terms, the great medical baronets from the metropolis at the houses of the nobility, declined to meet Dr. Thorne in consultation. He must have bitterly regretted the day when he made this announcement. Dr. Thorne was not a pugnacious man; he had no disposition to provoke a fight; but there was that in him which would allow him to yield to no attack. He vigorously counter-attacked Dr. Fillgrave in a letter to the Barsetshire *Conservative Standard.*

> Dr. Fillgrave never knew another happy hour. Had he dreamed of what materials was made the young compounder of doses at Greshambury, he would have met him in consultation morning, noon and night without objection; but having begun the war, he was constrained to go on with it: his brethren would allow him no alternative. Thus he was continually being brought up to the fight, as a prize-fighter may be seen to be, who is carried up round after round, without any hope on his part, and who in each round, drops to the ground before the very wind of his opponent's blows. But Dr. Fillgrave, though thus weak himself, was backed in practice and in countenance by nearly all his brethren in the country. The guinea fee, the principle of giving advice and selling no medicine, the great resolve to keep a distinct barrier between the physician and the apothecary, and, above all, the hatred of the contamination of a bill were strong in the medical mind of Barsetshire.

Trollope's account of the great Barsetshire medical war is most amusing, but it is too near the truth to make comfortable reading. One aspect of the war is worthy of further comment. It is the question of how a doctor should behave when he is attending a family, and he is told that his services are no longer required. How should he behave, and how should the other doctor concerned behave? There are all sorts of ethical rules dealing with this situation, but it is well known that there are only two that are of any value. The first, of course, is the golden rule, "Do unto your colleague, etc."; the other rule is that the retiring doctor should make a supreme effort to behave gracefully. Dr. Fillgrave made the great mistake of behaving ungracefully.

Sir Omicron Pie.

Trollope loved to describe power and prestige. It is not surprising, therefore, that he should introduce into several of his novels the imposing figure of Sir Omicron Pie, the great London consultant. The period of waiting for his arrival, the arrival, the consultation and the giving of the opinion are always described with great unction.

George Eliot, 1819 to 1888.

In these days "medical research" has come to mean research conducted in a laboratory. Certainly many of the epoch-making discoveries have come from the laboratory. However, it is forgotten that much important work, even epoch-making work, has been done by men actively engaged in medical practice. Such names come to mind as those of Withering, Jenner, James Mackenzie and Wilfred Pickles.

Literature contains full-length portraits of two men who had a passionate desire to devote their lives to medical research. One was an Englishman, Dr. Lydgate, in George Eliot's "Middlemarch"; he was a country doctor. The other was an American, Martin Arrowsmith, in Sinclair Lewis's "Martin Arrowsmith"; he was a bacteriologist.

George Eliot (Mary Ann Evans) was an intellectual. She was, in the fullest sense of the word, a "natural philosopher". Not only did she devolop and expound a particular philosophy of life, but she developed it in the light of scientific principles which she thoroughly grasped. Such qualities as these may well mean literary death to a novelist as in the end they meant death to H. G. Wells. However, George Eliot was a born story-teller. It was only in her later years that her desire to expound overcame her desire to entertain. It was her scientific knowledge that enabled her to draw such a character as Dr. Lydgate.

Lydgate came from a good family. His father had been a military man, and his uncle was a baronet. The following is the account of his intellectual awakening.

> One vacation, a wet day sent him to the small home library to hunt once more for a book which might have some freshness for him: in vain! unless, indeed, he took down a dusty row of volumes with grey paper backs and dingy labels—the volumes of an old Cyclopædia which he had never disturbed. It would at least be a novelty to disturb them. They were on the highest shelf, and he stood on a chair to get them down. But he opened the volume which he first took from the shelf; somehow one is apt to read in a makeshift attitude, just where it might seem inconvenient to do so. The page he opened on was under the head of Anatomy, and the first passage that drew his eyes was on the valves of the heart. He was not much acquainted with valves of any sort, and he knew that valvæ were folding doors, and through this crevice came a sudden light startling him with his first vivid notion of the finely-adjusted mechanism of the human frame. But the moment of vocation had come, and before he got down from his chair, the world was made new to him by a presentiment of endless processes filling the vast spaces planked out of his sight by that wordy ignorance which he had supposed to be knowledge. From that hour Lydgate felt the growth of an intellectual passion.

Lydgate was apprenticed to a country practitioner. After a short period in Paris he set up as a general practitioner in the provincial town of Middlemarch.

> Lydgate was ambitious above all to contribute towards enlarging the scientific, rational basis of his profession. The more he became interested in special questions of disease, such as the nature of fever or fevers, the more keenly he felt the need for that fundamental knowledge of structure which just at the beginning of the century had been illuminated by the brief and glorious career of Bichat, who died when he was only one and thirty, but like another Alexander, left a realm large enough for many heirs.

It may be said at once that Lydgate failed. He failed temporarily as a practitioner, but, more seriously, he completely failed to satisfy his passion for research. His temporary failure as a practitioner was due to the fact that at first he had not learned that medicine is an art as much as a science, the art being that of managing human beings. He knew that most illnesses were naturally self-limiting—that the cure was due to *Vis Medicatrix Naturae*. He therefore decided to treat them without the use of drugs. In one case of pneumonia he was very successful. However, most of his patients simply could not understand him; their minds were quite unprepared for so violent a departure from ordinary practice. However, such a failure as this was certain to be temporary. So able a man as Lydgate was bound to have sized up the situation and to have altered his practice accordingly.

The cause of his real failure was very different. He fell in love with and married Rosamond Vincy, the daughter of one of the town's leading merchants. Rosamond was apparently a mild creature, but she was possessed of a passion equally as strong if not stronger than was his for research. It was the passion for social advancement. She had no idea of staying in Middlemarch. She wished to live either in London or close to Lydgate's grand relatives in the north.

> Lydgate secretly wondered over the terrible tenacity of this mild creature. There was gathering within him an amazed sense of his powerlessness over Rosamond. His superior knowledge and mental force, instead of being, as he had imagined, a shrine to consult on all occasions, was simply set aside on every practical question. He had regarded Rosamond's cleverness as precisely of the receptive kind which became a woman. He was now beginning to find out what that cleverness was—what was the shape into which it had run as into a close network aloof and independent. No one quicker than Rosamond to see causes and effects which lay within the track of her own tastes and interests: she had seen clearly Lydgate's pre-eminence in Middlemarch society, and could go on imaginatively tracing still more agreeable social effects when his talent should have advanced him; but for her, his professional and scientific ambition had no other relation to these desirable effects than if they had been the fortunate discovery of an ill-smelling oil. And that oil apart, with which she had nothing to do, of course she believed in her own opinion more than she did in his. Lydgate was astonished to find in numberless trifling matters, as well as in this last serious case of the riding, that affection did not make her compliant.

She was in fact a master of the art of evasion. She had that victorious obstinacy which never wastes its energy in impetuous resistance. What she liked to do was to her the right thing, and all her cleverness was directed to getting the means of doing it. When Lydgate fell seriously into debt, she secretly thwarted all his plans for economy. She devised her own plan of escaping from their difficulties, and without consulting Lydgate she wrote what was meant to be a "winning" letter to his rich uncle, Sir Godwin, asking for a thousand pounds. Sir Godwin replied not to her but to Lydgate himself, telling him when he had something to request, not to set his wife to do it, and he refused the money. When Lydgate reproached her:

> She said nothing, but under that quietude was hidden an intense effect. She was in such entire disgust with her husband that she wished she had never seen him. Sir Godwin's rudeness towards her and utter want of feeling ranged him with Dover and all the other creditors—disagreeable people who only thought of themselves, and did not mind how annoying they were to her. Even her father was unkind and might have done more for them. In fact there was but one person in Rosamond's world whom she did not regard as blameworthy, and that was the graceful creature with blonde plaits and with little hands crossed before her, who had never expressed herself unbecomingly, and had always acted for the best—the best naturally being what she liked best.

Lydgate was in an unexpected way relieved of his money troubles, but, of course, he had to give up all idea of a country practice combined with research.

> He died when he was only fifty, leaving his wife and children provided for by a heavy insurance on his life. He had gained an excellent practice, alternating, according to the season, between London and the Continental bath places; having written a treatise on Gout, a disease which has a good deal of wealth on its side. His skill was relied on by many paying patients, but he always regarded himself as a failure: he had not done what he once meant to do.

Robert Louis Stevenson, 1850 to 1894.

If during one of those quiz sessions, which are so often heard over the air, the questions were asked: "Who was Dr. Perry, or Dr. Jobling, or Dr. Lydgate?" it is doubtful

if many of those questioned could answer. However, there are two doctors whose names are known in every household. They are Dr. Jekyll and Dr. Watson.

Dr. Jekyll (and Mr. Hyde).

There is no need to comment on the famous allegory. What is of intense interest from the medical point of view is that in the 80's of the last century when Stevenson wrote "Dr. Jekyll and Mr. Hyde" he should have hit on the idea of making Dr. Jekyll synthesize a mind-transforming drug. During recent years, outstanding pharmacological advances have made the use of such drugs commonplace.

The following is Dr. Jekyll's description of his sensations immediately after taking the drug.

> Late one accursed night, I compounded the elements, watched them boil and smoke together in the glass, and when the ebullition had subsided, with a strong glow of courage, drank off the potion.
>
> The most racking pangs succeeded: a grinding in the bones, deadly nausea, and a horror of the spirit that cannot be exceeded at the hour of birth or death. Then these agonies began swiftly to subside, and I came to myself as if out of a great sickness. There was something strange in my sensations, something indescribably new, and, from its very novelty, incredibly sweet. I felt younger, lighter, happier in body; within I was conscious of a heady recklessness, a current of disordered sensual images running like a mill race in my fancy, a solution of the bonds of obligation, an unknown, but not an innocent freedom of the soul. I knew myself, at the first breath of this new life, to be more wicked, tenfold more wicked, sold a slave to my original evil; and the thought, in that moment, braced and delighted me like wine. I stretched out my hands, exulting in the freshness of these sensations.

Dr. Livesey.

Stevenson also created Dr. Livesey in Treasure Island. It is an excellent picture of a country doctor.

Conan Doyle, 1859 to 1930.

Conan Doyle was trained as a doctor, and for a while he practised as one. In "Round the Red Lamp" there are many excellent medical stories. "The Stark Munro Letters" is little read these days, but it is full of interest. The picture of Dr. Cullingworth is that of a medical man who had many admirable qualities, but who was too flamboyant to be acceptable to his colleagues.

The doctor by whom Conan Doyle is known to the public is Dr. Watson.

Dr. Watson.

Dr. Watson was the colleague of the great Sherlock Holmes. He is generally accepted as being a man of excellent character, who was singularly lacking in the qualities of imagination and penetration. The modern use of the word "dumb" would seem to have been specially devised to describe him. Nothing could be further from the truth. There was nothing "dumb" about Watson. It is usually forgotten that it was Watson who worked up and presented to the public the reports of Holmes's cases; and it is generally accepted that this presentation was masterly. So far from being "dumb", Watson was a highly intelligent and very gifted man. However, his gifts were of a lower order than those of Holmes. If Watson was given all the facts of a finished case, he could sort them out, analyse them and present the essentials in a clear, orderly and dramatic fashion. If he was capable of analysis, however, he was not capable of synthesis. Holmes was a master at both. Holmes was at his best when he was building up a case from small scraps of evidence, all apparently unrelated. It is this particular faculty that has led teachers of clinical medicine to hold him up as an example to their students. The original of Holmes was, of course, one of Conan Doyle's medical teachers, and Holmes's methods ("You know my methods, Watson") were those of a first class clinician. Certainly students could be taught to imitate his concentration, his highly developed powers of observation and his systematic use of a vast previous experience. What could not be imitated would be the brilliant flash of intuition that led him to make his final and usually successful leap in the dark.

Watson's mind has suffered by comparison with Holmes, but it was an excellent one nevertheless.

Bernard Shaw, 1856 to 1950.

"The Doctor's Dilemma" (1906).

I am indebted to Hespeth Pearson's "Bernard Shaw" for the following details concerning the way in which "The Doctor's Dilemma" came to be written.

> Mrs. Shaw reminded him how, while chatting with Sir Almroth Wright, at St. Mary's Hospital, they had been interrupted by an assistant who wanted to know whether the eminent physician could add another tuberculous patient to those he was already treating by his new opsonic method, the number he could so treat being necessarily limited. "Is he worth it?" asked Sir Almroth. Shaw instantly saw that there was a play in the situation, and said so to Mrs. Shaw, but thought no more of it until her reminder at Mevagissey. The subject also enabled him to take up a challenge issued by William Archer, who had stated in print that Shaw could not claim the highest rank as a dramatist until he had depicted death on the stage. He, therefore, determined to write a tragedy, all about doctors and death, and to make it the most amusing play.

In "The Doctor's Dilemma" Shaw dramatized aspects of the leading physicians and surgeons of the day. Pearson describes Shaw's method of studying the profession. Apparently, once a month until the age of 70 years, he suffered from devastating headaches. He used his disease to learn all about doctors.

> Like Falstaff, Shaw turned his disease to commodity, using his headaches to learn all about doctors: "I used to be a collector of uncanonical therapeutics. Whenever I heard of a new method of treating illness I presented myself for treatment when next I had a spare hour. Though my celebrity made me an interesting patient, I was medically a very disappointing one, as there was nothing more serious the matter with me than the occasional headaches which, like common colds, reduce Harley Street to impotence. The cure of a man who is obviously not ill cannot be claimed as a triumph by any physician, orthodox or unorthodox. Still, if I could not credit the practitioner with success, at least I could not reproach him with failure. And I gathered a good deal of first hand information which I could not have obtained by any other means.

The doctor's dilemma arose in the following manner. Sir Colenso Ridgeon has just been knighted, in acknowledgement of his supposed discovery of a cure for tuberculosis. The cure is by inoculation. The administration of the inoculation has to be carefully controlled by means of what is known as the "Opsonic Index". Unless the index indicates a favourable moment, the inoculation may hasten the disease and kill the patient. The amount of material ready for inoculation is very limited, and Sir Colenso has room for only one more patient on his list. A beautiful woman, Mrs. Dubedat, comes to see him, and begs him to save her husband, who is an artist. He falls in love with her, and invites her and her husband to a dinner he has arranged at a hotel to celebrate his knighthood, and where they will meet some of his old friends. After the dinner, all are agreed that Dubedat is a brilliant artist and a charming man. Ridgeon says to Mrs. Dubedat: "You shall go away quite happy. He is worth saving. He must and shall be saved." The Dubedats retire. It then turns out that not only has Dubedat borrowed money from all of them, but he has also stolen a gold cigarette case. Later it is discovered that he has entered into a bigamous marriage with one of the hotel's housemaids. He is, in fact, a young blackguard. Ridgeon now has to decide whether he will save Dubedat, or whether he will instead save Dr. Blenkinsop, a hardworking general practitioner and an old friend, who has revealed that he is suffering from tuberculosis. This is the "Doctor's Dilemma".

The play is a satire on doctors and particularly on the specialists of Harley Street. The three friends of Ridgeon, Sir Patrick Cullen, Sir Ralph Blomfield Bonington and Mr. Cutler Walpole, are typical representatives of the

consultant type. One after the other they call to congratulate him. Sir Patrick Cullen is an old man, and his theme is "I've seen it all before".

SIR PATRICK: Lord! yes. Modern science is a wonderful thing. Look at your great discovery! Look at all the great discoveries! Where are they leading to? Why, right back to my poor dear father's ideas and discoveries. He's been dead now for forty years. Oh, it's very interesting.

RIDGEON: Well, there's nothing like progress, is there?

SIR PATRICK: Don't misunderstand me, my boy, I'm not belittling your discovery. Most discoveries are made regularly every fifteen years; and it's fully a hundred and fifty since yours was made last. That's something to be proud of. But your discovery's not new. It's only inoculation. My father practised inoculation until it was made criminal in eighteen-forty. That broke the poor old man's heart, Colly, he died of it. And now it turns out that my father was right after all. You've brought us back to inoculation.

Sir Patrick says of Cutler Walpole:

He worked hard at anatomy to find something fresh to operate on; and at last he got hold of something he calls the nuciform sac, which he's made quite the fashion. People pay him five hundred guineas to cut it out.

When Walpole enters the following conversation takes place.

WALPOLE: By the way, I hope I'm not disturbing you two in anything private.

RIDGEON: No, no. Sit down. I was only consulting him. I'm rather out of sorts. Overwork, I suppose.

WALPOLE (swiftly): I know what's the matter with you. I can see it in your complexion. I can feel it in the grip of your hand.

RIDGEON: What is is?

WALPOLE: Blood-poisoning.

RIDGEON: Blood-poisoning! Impossible.

WALPOLE: I tell you, blood-poisoning. Ninety-five of the human race suffer from chronic blood-poisoning, and die of it. It's as simple as A.B.C. Your nuciform sac is full of decaying matter—undigested food and waste products—rank ptomaines. Now take my advice, Ridgeon. Let me cut it out for you. You'll be another man afterwards.

Sir Ralph Bonington is the last to come in.

Sir Ralph Bloomfield Bonington wafts himself into the room. He is a tall man, with a head like a tall slender egg. He has been in his time a slender man; but now, in his sixth decade, his waistcoat has filled out somewhat. His fair eyebrows arch goodnaturedly and uncritically. He has a most musical voice; his speech is a perpetual anthem; and he never tires of the sound of it. He radiates an enormous self satisfaction, cheering, reassuring, healing by the mere incompatibility of disease or anxiety with his welcome presence. Even broken bones, it is said, have been known to unite at the sound of his voice; he is a born healer, as independent of mere treatment and skill as any Christian Scientist. When he expands into oratory or scientific exposition, he is as energetic as Walpole; but it is with a bland, voluminous, atmospheric energy, which envelopes its subject and its audience, and makes interruption or inattention impossible, and imposes veneration and credulity on all but the strongest minds. He is known in the medical world as B.B.; and the envy roused by his success in practice is softened by the conviction that he is, scientifically considered, a colossal humbug: the fact being that, though he knows just as much (and just as little) as his contemporaries, the qualifications that pass muster in common men reveal their weakness when hung on his egregious personality.

It is part of the plot that Sir Ralph should have no idea at all as to how to administer the dangerous vaccine Ridgeon has discovered. He refers to it as an "antitoxin", and cares nothing for the Opsonic Index. "There are only two rules for antitoxins", he says. "First, don't be afraid of them. Second, inject them a quarter of an hour before meals, three times a day."

The most interesting medical character in the play is Ridgeon. Shaw undoubtedly uses Ridgeon to satirize what he considered to be a god-like attitude on the part of certain scientists. They were god-like inasmuch as they considered themselves to be above the ordinary ethical rules that guided other people. Ridgeon is in love with Mrs. Dubedat. Dubedat turns out to be a blackguard. Ridgeon has no hesitation, therefore, in breaking his promise to save Dubedat. He hands him over to the care of Sir Ralph Bonington. Sir Ralph, of course, gives him the antitoxin "three times a day, before meals", and Dubedat dies, as Ridgeon knew he would.

The last scene is an exhibition of the late Dubedat's paintings. Ridgeon attends and Mrs. Dubedat reproaches him with his perfidy. Ridgeon tells her of his love for her. She repulses him, but Ridgeon is not very put out, as he feels certain of success in the end. To change the conversation, he says, "I have marked five pictures as sold to me". Mrs. Dubedat replies: "They will not be sold to you. Louis's creditors insisted on selling them, but this is my birthday; and they were all bought in for me this morning by my husband." Ridgeon is flabbergasted by this revelation that she has already remarried and the play ends with his saying, "Then I have committed a purely disinterested murder".

Sinclair Lewis, 1885 to 1951.

Dr. Martin Arrowsmith.

Martin Arrowsmith was the son of J. J. Arrowsmith, who conducted the New York Clothing Bazaar in Elk Mills, a village in the State of Winnemac. In 1897, when the story opens, he was a boy, and he had established himself as the unofficial and unpaid assistant to Doc Vickerson. He is determined to follow in "Doc's" footsteps and become a doctor. His parents died, but they left him enough money for his arts and medical courses. He attended the University of Winnemac. As is the case with most of Sinclair Lewis's books, "Martin Arrowsmith" is a scathing satire on the American scene. The following is the description of the University of Winnemac.

> There are twelve thousand students, besides this prodigy Oxford is a tiny theological school and Harvard a select college for young gentlemen. The University has a baseball field under glass; its buildings are measured by the mile; it hires hundreds of young Doctors of Philosophy to give rapid instruction in Sanskrit, navigation, accountancy, spectacle fitting, sanitary engineering, provincial poetry, tariff schedules, Rutabaga-growing, motor car designing, the history of Veronezh, the style of Matthew Arnold, the diagnosis of myonypertrophia kymoparalytica, and department store advertising. Its president is the best money raiser and the best after-dinner speaker in the United States and Winnemac was the first school in the world to conduct its extension course by radio.

Nevertheless, it was at Winnemac that Arrowsmith received his great inspiration. The Professor of Bacteriology was Max Gottlieb. Gottlieb became and remained his hero. In the main the novel is the story of his struggle, first to become a good bacteriologist, and secondly to carry out first class research work. Unlike Lydgate, Arrowsmith succeeded. If Lydgate failed because of his wife, Arrowsmith succeeded because of his. Arrowsmith possessed what is usually called "the artistic temperament". Leora thoroughly understood him, and saved him from the worst consequences of his temperamental defects. After Arrowsmith had become a very well-known bacteriologist, Leora died. He later remarried. His second wife was a wealthy woman, and she was in the New York "social swim". She had no insight into the mind of a scientist, and she constantly interrupted his work with social demands. Arrowsmith therefore found himself in much the same position as Lydgate. However, he was made of sterner stuff than Lydgate, and rather than give up his science he left his wife.

Henry Handel Richardson (Ethel Henrietta Richardson), 1870 to 1946.

Two outstanding tragedies have been written about Australia. The first was "For the Term of His Natural

Life" by Marcus Clarke, with the scenes of which we Tasmanians are very familiar. The second was "The Fortunes of Richard Mahony" by Henry Handel Richardson. Miss Richardson was born in Melbourne. Her father, Walter Lindesay Richardson, was a doctor who came to Victoria in the sixties, and who practised at Ballarat, East Melbourne, Queenscliff and other centres.

There can be no doubt that the tragedy of Richard Mahony is the tragedy of Walter Lindesay Richardson. The experiences of those early years, before her father died, must have burned into Ethel Richardson's very soul.

Dr. Richard Mahony.

Mahony was a man of noble but warped character. It is difficult to define the exact nature of the flaw in his character. It is perhaps best described as a "partial wrongheadedness". Although he had a wide knowledge of medicine and was a successful doctor in his younger years, he was never temperamentally at ease in the practice of his profession. His marriage was fortunate to a degree. Mary Mahony is the outstanding doctor's wife in literature. She was a woman of marked personal charm, and she possessed great strength of character. It is the essence of the tragedy that her loyalty should involve her in Mahony's slow decline.

Mahony made a fortune from investments in gold mining, gave up medicine and returned to Europe. When he was nearly fifty years old, his wrongheadedness induced him to alter his investments, and he lost his fortune. He had to return to Australia and commence practice again. From this point on, the story is one of a doctor whose mental equipment was slowly decaying, forcing himself to grapple with the most difficult form of life known—that of a general practitioner.

The spectacle of doctors whose health has become impaired and who have not saved enough money on which to retire is a common one in medicine, and it is not usually seen as a tragedy. For the most part such doctors have learned by long experience how to practise medicine as an art, that is, how to manage people and situations, and they swim along fairly well in troubled waters. Mahony had never learned this art. The story of his attempts and his failures is told with great dramatic force, but it is one of the grimmest stories it is possible to imagine.

Conclusion.

Robert Louis Stevenson was also a sufferer from tuberculosis, and he also knew doctors well. In the dedication to "Underwoods" he paid the following great tribute to the medical profession.

> There are men and classes of men that stand above the common herd: the soldier, the sailor and the shepherd not unfrequently; the artist rarely, rarelier still, the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilisation; and when that stage of man is done with, and only remembered to be marvelled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practise an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Herculean cheerfulness and courage. So it is that he brings air and cheer into the sickroom, and often enough, though not so often as he wishes, brings healing.

The question must now be asked: "Does the evidence derived from a study of the great novelists wholly support this tribute?" The answer is that it does not wholly support it. According to the novelists, doctors are neither better nor worse than their neighbours. They rise to the same heights, and fall to the same depths. They yield to the same temptations, and are subject to the same inconsistencies and defects of character that afflict other people.

However, it can be said that doctors are almost invariably represented as being men of strong personality, whose character and bearing have an immense influence on those around them. In the majority of cases this influence is for good and only very occasionally is it for evil. If they do not deserve the whole of the tribute paid to them by Robert Louis Stevenson, at least, according to the novelists, they deserve much of it.

Acknowledgement.

I am greatly indebted to Professor Walter Murdoch for much helpful advice.

ASPECTS OF ALCOHOLIC HALLUCINOSIS.

By B. G. Burton-Bradley,
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> "Another and another cup to drown
> The memory of this impertinence."
> —Omar Khayyám.
>
> "Vengeance is mine; I will repay, saith the Lord."
> —*Romans*, xii, 19.

In Australia, little attention has been paid in the past to the syndrome of alcoholic hallucinosis. This article is an attempt for the first time to stress its importance as an entity under local conditions, to review the relevant literature and to suggest a more appropriate method of management.

Review of the Literature.

The nosological status of alcoholic hallucinosis, a comparatively rare syndrome characterized by the triad of (i) vivid auditory hallucinations, (ii) coherent delusions of persecution based upon them, and (iii) minimal clouding of consciousness, all consequent upon an unusually excessive intake of alcohol, has suffered a series of vicissitudes dating from the time of its first description by Marcel (1847), who separated it from delirium tremens, itself first described and named by Sutton (1813). The term alcoholic hallucinosis was first introduced into the literature by Wernicke, and ascetically described in the English translation of the textbook of Eugen Bleuler (1924) as "Wernicke's Acute Hallucinosis of Drunkards".

Mitchell (1904) drew attention, in a study of 33 cases, to the free use of distilled liquors almost without exception in all cases. Later (1913) he expressed the view that no form of mental alienation is more potentially dangerous to the individual and the community, and none responsible for a larger number of suicides and homicides, where drinking is common. Although the danger of suicides and homicides is conceded, an attempt will be made later in this article to mitigate this extreme and widely held attitude, and also the current practice in many cases of rapidly removing these patients to mental hospitals, often by a magistrate's order. Under the title "Alcoholic Mania", Kraepelin (1906) gave a very clear description of a case clinically identical with alcoholic hallucinosis. Dick and Colbert (1931), in an ear, nose and throat examination of 144 chronic alcoholic patients, 59 of whom had chronically infected sinuses, could find no relation between sinusitis and hallucinosis. In a personality study of 27 female patients suffering from alcoholic hallucinosis, Curran (1937), by a series of striking case histories, demonstrated the similarity with men in respect of the castration and dismembering fears of their psychopathology.

Seitz and Molholm (1947), in testing the mental imagery of 40 patients with schizophrenia, 10 patients who had recovered from alcoholic hallucinosis and 114 normal subjects, found a significantly lower mean percentage of auditory imagery in their schizophrenic and hallucinotic subjects than in their normal subjects, and they suggested the new concept that one of the factors responsible for auditory hallucinations is relatively deficient auditory imagery. By far the most extensive and painstaking study is that of Benedetti (1952), who, in an investigation extending over decades, subjected 113 patients and their relatives to a close scrutiny. Briefly, his findings showed three groups: (i) acute alcoholic hallucinosis, followed by a rapid and complete recovery within days or weeks and showing no overt features of schizophrenia (80%); (ii) chronic schizophrenic alcoholic hallucinosis, in which the symptoms extend beyond six months and pass fluidly into manifest schizophrenia (10%);

(iii) chronic dementing alcoholic hallucinosis, in which the symptoms extend beyond six months, and show a regular termination in dementia (10%). This investigation showed with great regularity that those cases in which the symptoms did not disappear as a result of abstinence within the first six months will never quite disappear, and Benedetti contended that this amount of time should be taken as the borderline which divides the acute fron the chronic form. He was unable to give a final statement on the nosological status of the first group, and there the situation must rest until adequate tests are available to define clearly the boundaries of the group of schizophrenias. According to May *et alii* (1953), many cases of alcoholic hallucinosis are delirious reactions, misdiagnosed as a result of failure to detect sensorial defect or visual hallucinosis.

The part played by abstinence in the syndrome has been considered by Victor *et alii* (1953) in a clinical study of 70 patients, 85% of whom showed a clear-cut period of abstinence between the spree and the hallucinosis. The present communication is concerned with a series of 41 consecutive patients with alcoholic hallucinosis admitted to the Brisbane Mental Hospital from the State of Queensland over a period of seven years and observed by myself.

General Features.

The patients observed consisted of 40 males and one female. In the acute cases the age of the patients at the time of their first episode ranged from 19 to 52 years (Table I), the majority

TABLE I.
Ages of Patients at the First Episode.

Age in Years.	Acute Alcoholic Hallucinosis.		Chronic Alcoholic Hallucinosis.	
	Number.	Percentage.	Number.	Percentage.
Under 20 ..	1	2·8	—	—
20 to 30 ..	10	27·7	—	—
31 to 40 ..	11	30·5	2	40·0
41 to 50 ..	11	30·5	—	—
51 to 60 ..	3	8·5	2	40·0
Over 60	—	—	1	20·0
Total	36	100·0	5	100·0

being in their best working years. The vast preponderance of males is hard to explain, but may be related in part to the special occupational hazards in the present series and to the severer social ostracism of the inebriate female.

Eight patients had a history of prior episodes of acute alcoholic hallucinosis; four had two, three had three, and one had four episodes. Thirty-three patients had only one episode.

From the racial standpoint, the vast majority were Australians of British parentage (28 patients), six came from the United Kingdom, two were full-blooded aborigines, three were part-aborigines, one was part-Polynesian, and one was a Polish New Australian.

Marital status findings show the inability of this group of patients to make an adequate heterosexual adjustment (Table II).

Occupations followed were largely those of the unskilled class (Table III). The station hand and cane cutter seem to be especially prone, the seasonal and concentrated nature of the work allowing accumulation of the necessary capital to indulge in the spree, which is often planned well ahead. This applies also to the unskilled labourer. The absence of professional workers in this group of government hospital patients is in contrast to their presence in other categories of mental illness, e.g., alcoholic Korsakoff, manic-depressive psychosis, schizophrenia and paranoid states. Nevertheless, 31 patients had had a primary education, four had had a secondary education, and four had served an apprenticeship; almost all were considered conscientious workers, and none were considered by their relatives and employers as a burden to the community.

The geographical place of onset of the hallucinosis favours country districts as opposed to urban ones. On the 1954 census of the Commonwealth, the major cities of more than 40,000 inhabitants, comprising approximately half the population of the State, provided 12 cases, while the country districts, comprising the other half, and often remotely situated, provided 29 cases—more than twice as many. One country town with a population of 1700 inhabitants provided three cases.

Twenty-eight cases were admitted to hospital by a magistrate's order (Table IV). No statistics are available on the modes of admission to hospital for other categories of mental illness, but one is left with the strong impression that the use of the magisterial order is not nearly so great.

TABLE II.
Marital Status Findings.

Marital Status.	All Cases.		Acute Alcoholic Hallucinosis.	Chronic Alcoholic Hallucinosis.
	Number.	Percentage.		
Single	28	68·0	26	2
Separated	7	17·0	5	2
Married (marital disharmony) ..	3	7·3	2	1
Married (wife in Europe) ..	1	2·4	1	—
Wife deserted ..	1	2·4	1	—
Married (living with *de facto* wife) ..	1	2·4	1	—
Divorced	—	—	—	—
Total	41	99·5	36	5

January was the favoured month of admission to hospital (10 cases), the number of admissions being double that of the next highest months of July and August (five cases each), a fact clearly related to abuse of the Christmas festivities. Other months showed three, two and one admissions to hospital.

Spree data are usually difficult to assess, the younger age groups tending to boast of their alcoholic capacity, and the older age groups the reverse. However, by taking into account the vivid memory of the patient suffering from alcoholic hallucinosis and such non-variable factors as bank passbooks

TABLE III.
Subjects' Occupations.

Occupation.	All Cases.		Acute Alcoholic Hallucinosis.	Chronic Alcoholic Hallucinosis.
	Number.	Percentage.		
Labourer	10	24·4	9	1
Station hand ..	9	21·9	7	2
Cane cutter ..	9	21·9	9	—
Artisan	5	12·2	3	2
Seaman	3	7·3	3	—
Grazier	2	4·9	2	—
Domestic	1	2·4	1	—
Male nurse ..	1	2·4	1	—
Hairdresser ..	1	2·4	1	—
Total	41	99·8	36	5

and pay cheques handed to publicans and used exclusively on alcohol, it has been possible in some cases to get a fair estimate of the alcohol intake during the spree period. In eight such cases, the amount spent by the individual on alcohol ranged from £60 to £300 over a period of five to 35 days, in amounts varying from £6 to £12 daily, an unusual amount by any standards, even when shared with drinking companions. In 22 cases the spree period varied from three to 35 days. Various types of alcohol were consumed (Table V), often several types by the one person. Except in those patients who confined their drinking to beer alone, spirits were invariably consumed, and rum was the worst offender.

In a considerable proportion of cases, it was possible to demonstrate a period of abstinence, during which no alcohol was taken, between the spree and the hallucinosis. In 17 cases there was total abstinence for periods ranging from eight hours to five days, with an average of two days. In five cases there

was a terminal reduction of intake over a period of two days, during which a glass or two of the favourite beverage was taken. In seven cases a period of abstinence was assumed on the basis of police evidence, recorded with a thoroughness that left no room for doubt. Two of these patients were arrested for "drunkenness", and they developed hallucinosis later while in gaol, when the charge had to be altered to that of "mentally sick". In two cases, no period of abstinence could be shown, the hallucinations developing during the course of the drinking. In 10 cases, adequate information about an abstinence period was unavailable. In no case, however, was the spree coextensive with the hallucinosis.

TABLE IV.
Modes of Admission to Hospital.

Mode of Admission.	All Cases.		Acute Alcoholic Hallucinosis.	Chronic Alcoholic Hallucinosis.
	Number.	Percentage.		
Magistrate's order	28	68·2	26	2
Private request	11	26·8	9	2
Voluntary ..	2	4·9	1	1
Total	41	99·9	36	5

The duration of the hallucinosis was variable. In 35 cases the hallucinations had disappeared within 26 days; in 31 of these they had disappeared within 14 days. In one case it continued for 114 days and was followed by a complete remission, in five it became chronic, and four of these patients developed manifest schizophrenia and one became demented. Multiple third person auditory hallucinations were invariably present and were maximum at the onset. As the intensity of the hallucinosis subsided over the days, they were usually added to or replaced

TABLE V.
Types of Alcohol Used.

Principal Spree Beverage.	All Cases.		Acute Alcoholic Hallucinosis.	Chronic Alcoholic Hallucinosis.
	Number.	Percentage.		
Rum	19	46·3	18	1
Beer	9	21·9	7	2
Wine	4	9·8	4	—
Whisky	2	4·9	1	1
Gin	2	4·9	2	—
Unrecorded ..	5	12·2	4	1
Total	41	100·0	36	5

by "voices" in the second person. Visual hallucinations were not prominent. They were reported by eight patients, were transient and occurred at night during the first few days. Olfactory hallucinations were reported by two patients. The "voices" were of a threatening nature. In this regard, the methods adopted by the patient to "escape" from his imaginary persecutors are important (Table VI), as it is in relation to these that problems of management are concerned. Of 60 such instances, 56 occurred prior to admission to hospital, and four while the patient was in hospital (three suicidal threats expressed and one suicidal thought expressed), all four occurring during the first week.

Psychopathology.

Patients suffering from alcoholic hallucinosis do not appear to have been extensively studied by psychoanalysts, and complete analyses would seem to be rare. According to Fenichel (1945), Freud offered the suggestion that the anxiety frequently accompanying hallucinations is due to a reappearance of part of the reality which has been repudiated. Bromberg and Schilder (1933), in an analytically orientated study of 10 cases of acute alcoholic hallucinosis, expressed the view that the patients, with their unconscious homosexual tendencies, in striving towards heterosexuality become disturbed by the threatened loss of it, and in response develop fears of loss of the sexual organs (castration fear), of parts of the body (dismembering fear or *Zerstueckelungsmotiv*—the result of narcissistic investment), or of the entire body (death fear, which is associated with aphanisis, that is, fear of loss of all sexual sensation).

In the present cases it was possible to detect dismembering fear (38 instances), castration fear (eight instances), and death fear (35 instances). Whatever the metabolic effects on the sensory apparatus as the result of the alcohol-induced hallucinosis. I think it is reasonable to infer that the above-mentioned dramatic and thinly disguised symbolism points to factors in the patient's earlier life experiences, which are of some importance to him. This is shown when the patient can recognize the identities of some of the punitive voices, e.g. wife, mother, "best mate", drinking companions, "two groups", "everyone in town", "seven or eight jokers", "four truckloads of soldiers", "hundreds of Kanakas", etc. It would thus appear that the patient is reliving component aspects of his prior personality development, the "voices" being those of his conscience.

TABLE VI.
"Escape" Methods.

Method.	Number of Incidents.
Police protection sought	16
Suicidal attempts	6
Jumped out of train or building ..	6
Transitory homicidal thoughts expressed	5
Aggressive act	5
Suicidal thoughts expressed	4
Decamped into bush	4
Suicidal threat expressed	3
Decamped from a country general hospital	3
Relative's protection sought	2
Publican's protection sought	2
Priest's protection sought	1
Homicidal dream related	1
Aggressive thoughts expressed	1
Locked himself up	1
Total	60

Clinical Features.

Summarizing the features of the present cases in the form of a clinical amalgam, one gets the following type of picture. The patient is a male adult in his best years, more often than not a cane cutter, station hand or labourer. He will have at least several years of alcoholic history, but is not a chronic alcoholic in the sense of his being a continuing problem to himself and others. He is respected by friends and employers; his relatives deplore his excesses. He is pleasant, syntonic and easily approachable, but in so far as he has tried, he will have had considerable difficulty in making a satisfactory heterosexual adjustment. He has no overt prehallucinotic schizoid or schizophrenic features. Often planning the spree well in advance, he engages in an unusually excessive indulgence, to continue until an abrupt termination, either externally imposed or by his own decision. In either case there follows an abstinence period of ominous calm, to be followed a few nights later by the onset of multiple third person auditory hallucinations. The latter develop from transient auditory illusions or (more rarely) from transient visual illusions and are maximal and most fearful at onset. Commonly it is "the mob", or a large group of people, who talk loudly among themselves of the manner in which they will cut, chop, castrate, hang, burn or kill the patient as a punishment for his sexual and other misdemeanours. No torture is too great. It is at this stage that he will seek to escape from his imaginary persecutors, and thus initiate the train of events that leads to his confinement. He may seek the protection of a person in authority, e.g. a policeman, attempt suicide or commit an aggressive act. In any case the intensity of the hallucinations will slowly subside and their expression will be more often in the second person, and finally they will disappear along with their delusional elaboration. In a small number of continuing cases, after the passage of months a latent schizophrenia becomes manifest or there is termination in dementia; these two complications are the exception rather than the rule.

Acute Alcoholic Hallucinosis and Schizophrenia.

European work on the nature of acute alcoholic hallucinosis has been influenced largely (i) by the schizophrenia concept of

Eugen Bleuler, for whom the entity was with certainty or great probability a mere syndrome of schizophrenia induced by alcohol, the mental symptomatology being explained on the ground that the generally disjointed auditory hallucinations of schizophrenics become connected through indulgence in alcohol, and (ii) by the exogenous toxic reaction concept of Bonhoeffer, for whom the mental symptomatology was independent of the underlying physical state. For Huber (1939) there are two types, the first due to alcohol alone, and the second due to schizophrenia *plus* alcohol. Henderson and Gillespie (1944) consider the term alcoholic hallucinosis to be a misnomer, and state that they have known precisely similar hallucinoses to occur in the absence of alcoholism, and, quoting Schneider, that the constitutional basis is either manic-depressive or schizophrenic.

The evidence for the non-schizophrenic nature of acute alcoholic hallucinosis supported by the present study is strong but inconclusive. The complete and rapid recovery in hours, days or weeks after the onset of an alcohol-induced hallucinosis of short course, the absence of thought disorder and obtunded affect, the non-schizophrenic pre-psychotic and post-psychotic personality, and the appropriateness of the behaviour to the hallucinatory content are not features usually ascribed to the term schizophrenia. Also, religious ideations are absent in acute alcoholic hallucinosis, although not infrequent in schizophrenia. Acute alcoholic hallucinosis does not develop in known patients with schizophrenia while they are on leave from mental hospitals. On the other hand, Bleuler's view of the integrating function of alcohol on hallucinations, and Benedetti's (1952) findings of a greater incidence of schizophrenia among the relatives of patients suffering from acute alcohol hallucinosis than in the general population, need to be remembered. However, if we consider the picture as a whole, including the dramatic symptomatology with multiple third person auditory hallucinations, the course and prognosis, it can be seen that we are dealing with a combination not readily reproduced in other illnesses.

Discussion.

Whatever the virtue of the foregoing considerations, there is a good practical reason for considering acute alcoholic hallucinosis as non-schizophrenic, or at most a very special subgroup of the group of schizophrenias, and that is the problem of certification. The stigma of the latter is still a very real factor, and it seems to me that a case can no longer be made out for the routine use of this procedure on these otherwise valuable citizens. Although forensically eligible, it is not the usual practice for patients with *delirium tremens* or febrile deliria to be certified, and it should not be necessary with the vast bulk of those with alcoholic hallucinosis. The dangers of homicides and suicides have been overplayed in the past, and when they do exist it is either before the patients are detected (so that nothing can be done), or during the early part of their admission to hospital (the first week in the series quoted). A better course would be for the magistrate's order procedure to be abandoned, and in its place treatment carried out in the psychiatric ward of a general hospital.

The existence of abstinence, both complete and partial, and the time gap between the maximum intensity of alcohol intake and the maximum intensity of the hallucinations, suggest that the onset of the latter is due to metabolic or other unknown factors, and not due to the alcohol *per se*. Investigation of this aspect in the future might well throw some light on the nature of hallucinations themselves.

Summary.

1. Sociological and clinical aspects of 41 cases of alcoholic hallucinosis are described, and the literature is reviewed.

2. Cane cutters, station hands and labourers were the most prominent occupation groups, comprising 28 of the 41 patients.

3. A variety of alcoholic beverages were used, rum being the worst offender.

4. Immediately prior to the onset of the hallucinosis, a period of abstinence could be demonstrated in 29 instances. These cases showed three phases of variable length: spree, abstinence and hallucinosis.

5. All patients showed an inadequate heterosexual adjustment.

6. Reasons are given for the view that certification of these otherwise valuable citizens should be avoided in the vast majority of instances.

Acknowledgements.

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"IRREVERSIBLE" OR NEOSTIGMINE-RESISTANT CURARIZATION, WITH REPORT OF A CASE.

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ATTENTION has recently been drawn to the occurrence of an abnormal response to curare in patients suffering from gross biochemical disturbances of an acute nature (Foster, 1956; Hunter, 1956). After the first reports of cases of this kind, a surprisingly large number of similar experiences were communicated to the various journals (Burchell, 1957).

Briefly, the conditions giving rise to this situation are as follows. A patient, usually elderly, and often female, is submitted to surgery for an intestinal obstruction and/or strangulation of several days' duration. Pre-operative preparation is usually unsatisfactory for various reasons, and although gross biochemical and electrolyte disturbance is doubtless present, few patients, unfortunately, have had sufficient pre-operative investigations to throw any light on the precise nature of the derangement. At any rate, they are presumably suffering from the electrolyte deficiencies usually found in patients with excessive fluid loss from the alimentary tract; they are probably also suffering from water deficit and a certain degree of pre-renal uræmia.

When such patients have been anæsthetized, an alarmingly abnormal response to curariform drugs (notably d-tubocurarine) has sometimes occurred. On the administration of a dose of this drug, which may or may not have been quite small, profound muscular paralysis has ensued, which has persisted for many hours, and has not been reversed by neostigmine. In some cases, this has followed the first dose of d-tubocurarine; in other cases a second dose has been given. Likewise, in some cases a depolarizing relaxant (e.g. succinylcholine) has been

used prior to the administration of curare; but recently some series have been reported in which d-tubocurarine was the only relaxant drug employed.

Perusal of the literature reveals that most, if not all, of the cases of this type reported to date have terminated fatally, if the duration of the paralysis has been in excess of two hours. A case is now reported which resulted in recovery after five hours of subnormal respiration, four of which constituted complete or almost complete apnœa.

Report of a Case.

The patient, a male, aged 65 years, was first seen the night before a proposed laparotomy for the relief of an intestinal obstruction, which had been present for five days. Copious amounts of fluid had been aspirated from the stomach via a Wangensteen's tube, and that had been replaced by saline solutions and a hydrolysed amino-acid preparation. Two bottles of whole blood had also been given two days previously.

The patient's mental condition was not easily assessed, since a dose of chlorpromazine had been given only a short time before, and he was very drowsy. Physically, he was obviously a fairly sick man, with a slightly dry tongue. His pulse rate was 80 per minute; and his blood pressure was 110 millimetres of mercury systolic and 70 millimetres of mercury diastolic. A history of congestive cardiac failure, treated with digoxin and mercurial diuretics, was obtained from his usual physician.

No serum electrolyte determinations were available, but the following results of investigations are of interest. He was admitted to hospital on August 10, 1957. On August 15, his blood urea was 180 milligrammes per 100 millilitres, and the next day it was 160 milligrammes per 100 millilitres. The hæmoglobin value was 19·5 grammes per 100 millilitres.

In view of these figures, it was considered on August 17, when the patient was first seen, that fluid balance was still negative, and that salt deficit was probably also present, since systolic blood pressure was rather low for a patient of his age. One and a half litres of fluids, including one litre of normal saline, were therefore given during the night.

On the morning of August 18, some deterioration in general circulatory condition was observed, the blood pressure having fallen to 80 millimetres of mercury systolic. This was restored to 110 millimetres of mercury after transfusion with serum albumin, and it was decided to operate. Premedication with atropine, 1/100 grain, was therefore given, and anæsthesia was induced at 11.40 a.m. using thiopentone, 0·2 gramme; succinylcholine, 50 milligrammes; decamethonium, 3·0 milligrammes. A cuffed Magill's tube was inserted, and anæsthesia was maintained with nitrous oxide (two litres per minute) and oxygen (one litre per minute). Further doses of thiopentone to a total of 0·4 gramme were administered. The remaining events of the period of anæsthesia are best seen in the following timetable.

At 11.55 a.m. pethidine, 15 milligrammes, was given intravenously; respiration was controlled.

At 12.05 p.m. there was return of spontaneous respiration. The patient's condition was good. Blood pressure was 120 millimetres of mercury systolic; pulse rate was 84 per minute. The cause of the obstruction (bands across the lower ileum) had been found and was being dealt with.

At 12.10 p.m. full respiration was present, the abdomen was tight, and d-tubocurarine, 15 milligrammes, was given intravenously.

At 12.12 p.m. respirations ceased. Intermittent positive pressure ventilation was instituted.

At 12.50 p.m. the operation was concluded. There was no return of respiration. The patient's general condition was satisfactory; blood pressure was 110 millimetres of mercury systolic.

At 12.55 p.m. atropine, 1/100 grain, was given intravenously.

At 12.58 p.m. neostigmine, 1·5 milligrammes, was given intravenously in three divided doses, but it had no effect on respiration.

At 1.10 p.m. respiration was completely absent.

At 1.15 p.m. controlled respiration was continued, using air with basal oxygen and carbon dioxide absorption in a closed circuit system. The patient was quite deeply unconscious, and nitrous oxide was therefore discontinued. No anæsthetic agent of any kind was given for the remaining period.

At 1.30 p.m. slight tracheal tug was visible. Intravenous infusion of 500 millilitres of Darrow's solution was commenced.

At 2.45 p.m. tracheal tug was stronger. There was no real respiratory exchange.

A 3.15 p.m. there was some further recovery; a tidal exchange of perhaps 100 millilitres was present. Controlled respiration was continued, synchronizing with the patient's own efforts.

At 4.00 p.m. respiratory efforts were much stronger; only intermittent assistance was required.

At 4.30 p.m. there was adequate tidal volume; the patient was permitted to breathe air unassisted.

At 5.00 p.m. he was breathing well and his condition was good. Blood pressure was 100 millimetres of mercury systolic; pulse rate was 80 per minute. The patient was still unconscious. The tube was removed and the patient was returned to the ward.

At 7.00 p.m. he was breathing well and his colour was good. Pulse rate was 78 per minute. He was still unconscious.

The patient regained consciousness late that evening, and he was able to respond reasonably rationally to the spoken word next morning. The post-operative course at first was slow and uncertain, but after a fortnight the patient could hold an intelligent conversation, remember what he had read in the newspaper that day and was able to say that his memory had returned to normal, although he had no recollection of his first 10 days in hospital. He was discharged to his home on September 11.

Discussion.

Ætiology.

Ætiology no doubt lies in an alteration of the normal duration and possibly site of action of curare, brought about by the biochemical disturbance present. It is tempting to regard potassium as the major electrolyte responsible for this change, and Foster (1956) claims that a central action of curare is responsible, pointing out the continuing unconsciousness, despite the absence of anæsthetic agents. A full discussion of this question is beyond the scope of the present paper. However, it is true to say that the basic mechanism is not at present known.

Diagnosis.

Diagnosis rests on suspicion and on a knowledge of the occurrence of the condition. It has to be distinguished from apnœa due to carbon dioxide washout, and reflex apnœa from the presence of an endotracheal tube. These conditions are not common. In patients with controlled respiration, a very rapid rate of ventilation is required to produce acapnia—often the reverse is present. As for reflex apnœa, a gentle stimulation of the larynx by movement of the tube will usually result in vigorous straining. In either case, the over-all picture does not really resemble the profound paralysis present in this condition.

Treatment.

Prevention is undoubtedly the best therapy, and it must be admitted that the administration of d-tubocurarine to such patients is probably contraindicated. Foster now uses no relaxant drug at all in such cases, preferring to use cyclopropane and ether. Others use short-acting depolarizing drugs cautiously. However, there is a theoretical risk in these also, inasmuch as their inactivation depends on the presence of pseudo-cholinesterases, which are known to be deficient in starvation and similar states.

Treatment of the established condition is doubtless a matter of opinion. No apology is made for the following personal impressions. In many of the fatal cases, large, even toxic, doses of neostigmine were given, despite the failure of therapeutic doses. Other measures were tried, based on erroneous diagnosis, including administration of carbon dioxide, nalorphine, nikethamide, etc. Such significant statements as "spontaneous respiration failed to preserve a good colour" appear in the records of cases.

All of these measures constitute a further insult to a physiology which is already considerably deranged. Their effects can only be harmful. Ventilation with carbon

dioxide, hyperventilation with carbon dioxide absorption and the administration of analeptics are quite without value, whilst their adverse effects may be quite serious.

If the first dose of neostigmine, to a total of one tenth of the amount of d-tubocurarine (in milligrammes), is ineffective, further doses should not be given, as these will most likely only further depress respiration, as well as causing powerful parasympathetic side effects. Gentle artificial respiration, adequate for oxygen and carbon dioxide exchange, should be continued, using full carbon dioxide absorption and synchronizing carefully with the patient's own efforts, if present. This should not be ceased until it is quite beyond doubt that the patient's own tidal exchange will be adequate. It is unpardonable to stop artificial respiration, only to resume when the patient's colour "goes off" due to inadequate tidal exchange.

Ventilation of the patient should never be entrusted to an unskilled person; it is the anæsthetist's duty to stay with the patient until he is out of danger or is dead. He (the anæsthetist) got the patient into this; it is now his job to get him out of it again. A positive-negative pressure apparatus may be of value when long periods of assistance are required; in such a sick patient, purely manual positive pressure insufflation may interfere with venous return to the heart and may cause circulatory failure (Maloney *et alii*, 1953). However, some form of manual control is essential when the patient begins to contribute significant effort himself.

No stimulants of any kind should be given. Pressor drugs should be unnecessary; the need for them probably indicates failure of treatment and impending death. Blood pressure should be maintained by blood or fluid transfusion and by gentle artificial respiration. Hypotension in many of these patients is no doubt due to too vigorous an assistance to respiration with consequent impairment of venous return. In others, hypotension may ensue due to the surgical procedure which the patient has undergone, in which case replacement of deficient plasma volume is required. In short, the treatment of this condition is the treatment of respiratory failure; keep the patient alive until respiratory function returns. This means the minimum possible interference with physiology compatible with maintaining oxygenation, carbon-dioxide elimination and circulation.

Summary.

A brief review of the phenomenon of neostigmine-resistant curarization is presented with a report of a case. Treatment is discussed, and emphasis is laid on minimal interference with the physiology of the patient until recovery can occur.

Acknowledgements.

I wish to thank Dr. R. Rickard for his kind consent to report this case; I take this opportunity of apologizing to him for having caused him considerable anxiety for his patient's welfare. His patience and trust were most appreciated during a difficult few hours.

I also wish to thank the Director General of Public Health, Dr. H. G. Wallace, for permission to publish this paper.

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A SURVEY OF BLOOD ALCOHOL TESTING IN VICTORIA (1951 TO 1956).

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IN court proceedings, when an individual is charged with being under the influence of alcohol, analysis of his blood may provide valuable evidence. In coroners' cases the analysis of post-mortem samples of blood for alcohol content is a common practice. The following paper presents the findings in 1387 cases in which blood alcohol or urine alcohol determinations were carried out in the Government Medico-Legal Laboratories at the Coroner's Office, Melbourne. These laboratories undertake scientific work for the Melbourne and country coroners and for the Victorian Police Department. During the years 1954 to 1956 inclusive, the police work included the analysis of 694 samples of blood taken from drivers of vehicles when it was alleged the drivers were under the influence of alcohol. The results of these analyses are set out in Tables I, II and III. The Melbourne coroner's cases for the years 1951 to 1956 inclusive are surveyed in Tables IV and V. The method of analysis used in these laboratories is that of Kozelka and Hine (1941). This method is one of two recommended in the report of a committee appointed by the British Medical Association (1954).

Drivers under the Influence of Alcohol.

At the present time the taking of blood in Victoria is on a voluntary basis. Although 1129 drivers of vehicles were charged in 1955 with driving under the influence of alcohol, only 240 blood samples were submitted for analysis in that year.

It is interesting to note that, of 694 drivers from whom blood samples were submitted by the police for analysis during the three years 1954 to 1956, only 45 (6·5%) showed an alcohol concentration of less than 0·150%. The average alcohol content was 0·227%. In each of the three years surveyed in this report, over 90% of the drivers tested showed a blood alcohol level in excess of 0·150% and over 30% exceeded 0·250%.

These figures are similar to those reported by Spelman (1955) from Vermont, U.S.A. Spelman's analyses showed that 87% of the 473 Vermont drivers tested had a blood alcohol concentration above 0·150%, the average concentration being 0·224%.

In December, 1955, legislation was enacted in Victoria dealing with voluntary blood tests. The Act provides that if an individual has a blood alcohol concentration of less than 0·05% it is *prima facie* evidence that he is not under the influence of alcohol when he is driving a vehicle. Our survey shows that only two of the drivers tested had a blood alcohol concentration of less than 0·05%. The benefit of this provision is illustrated by one case in 1956, in which the driver had consumed a seven-ounce glass of beer 15 minutes before a serious accident. The driver stated that he had caused the accident through the onset of an asthma attack. He was initially charged with driving under the influence, but when we reported the result of the blood examination the charged was dropped. If, during the period of this survey, it had been the law of this State that a figure of 0·150% alcohol in the blood was *prima facie* evidence of intoxication, then 93·5% of the drivers who consented to blood tests when apprehended by the Victorian police would legally have been driving under the influence unless they could prove otherwise.

During the period 1954 to 1956 we received 66 specimens of urine taken from persons charged with driving under the influence of alcohol. The mean alcohol content of these specimens was 0·305%. In 22 of these cases blood samples were also received for analysis. The corresponding urine specimens showed higher concentrations of alcohol, the average ratio being 1·36 : 1·0.

Post-Mortem Blood Samples Tested after Road Accidents.

At the Coroner's Department, Melbourne, during the years 1951 to 1956 inclusive, of 268 motor-car drivers killed, blood alcohol determinations were made in 103 instances. Because the amount of work that could be done in our laboratory was limited by the staff available, an attempt was made to select those cases in which alcohol was likely to have been involved. These cases were chosen on the basis of the reported circumstances, such as the time of day, etc., for example, after 6 p.m.

In addition, some cases were deliberately excluded in which the victim had died in hospital after an accident, and it was thought that the interval of time after the accident was too great for blood alcohol estimation to be of value. Of the 103 motor-car drivers tested, 67 had a blood alcohol content of at least 0·100%, 50 of them exceeding 0·150%.

TABLE I.

Drivers Under the Influence of Alcohol, 1954 to 1956 (September 30).

Year.	Number of Persons Charged.	Number of Blood Tests.	Average Blood Alcohol Content.
1954	784	127	0·228%
1955	1129	240	0·229%
1956	1051	327	0·225%

In order to estimate the incidence of alcohol in fatal road accidents, every case would have to be investigated in detail. This survey is confined to a study of some of the victims.

TABLE II.

Drivers Under the Influence of Alcohol (1954 to 1956).

Blood Alcohol Concentration *per Centum.*	Number of Drivers in Each Range.		
	1954.	1955.	1956.
Less than 0·051	0	1	1
0·051 to 0·070	0	1	1
0·071 to 0·090	0	0	0
0·091 to 0·110	1	4	2
0·111 to 0·130	2	6	5
0·131 to 0·150	6	7	8
0·151 to 0·170	12	13	24
0·171 to 0·190	15	23	30
0·191 to 0·210	20	24	59
0·211 to 0·230	14	38	50
0·231 to 0·250	20	34	41
0·251 to 0·270	9	28	54
0·271 to 0·290	12	27	27
0·291 to 0·310	5	15	10
0·311 to 0·330	3	15	7
0·331 to 0·350	4	3	3
0·351 to 0·370	2	0	4
Greater than 0·370 ..	2	1	1
Total	127	240	327

In Western Australia, Pearson (1957) carried out a survey of coroner's cases covering the period 1950 to 1956, in which the only selection was the omission of blood tests of road accident victims who had died 12 hours or more after their accident. Pearson found that 34·2% of the motor-car drivers and 39·4% of all road accident victims tested showed an amount of 0·100% or more of alcohol in the blood.

As a result of our survey we can state that at least 25% of all the motor-car drivers killed had a blood alcohol content of 0·100% or more. This survey suggests that alcohol is a more significant factor in the production of road accidents than official statistics claim.

Of interest are the figures relating to pedestrians, 927 of whom were killed during the years covered by this survey. Blood alcohol estimations were made in 171 cases; in 79 of them we found a concentration of 0·150% or more.

It should be emphasized again that this is a specially selected group. Blood tests were made only in those cases in which it was thought that alcohol would be found.

Other Coroner's Cases.

There are many other cases coming within the jurisdiction of a coroner in which analysis of the blood for its alcohol content may throw useful light on the cause of a violent or unexpected death.

TABLE III.

Drivers Under the Influence of Alcohol (1954 to 1956).

Blood Alcohol Concentration *per Centum.*[1]	Percentage of Total Blood Samples for Each Year.		
	1954.	1955.	1956.
Greater than 0·050 ..	100·0	99·6	99·7
Greater than 0·100 ..	99·2	98·0	98·8
Greater than 0·150 ..	93·0	92·0	94·8
Greater than 0·200 ..	70·0	73·0	59·0
Greater than 0·250 ..	31·5	37·0	32·1
Greater than 0·300 ..	12·4	14·2	3·7

[1] Alcohol percentage means grammes of ethyl alcohol per 100 millilitres of blood (or urine).

Burning.

It is revealing how often a significant level of alcohol is found in the blood in cases in which a person is burned to death in a house; the victim, affected by alcohol, may be smoking in bed or, whilst under the influence of alcohol, may upset some device such as a kerosene heater. The individual succumbs to the inhalation of smoke, to carbon monoxide and to burns.

From 155 deaths by burning in the period surveyed, 22 victims (mainly adult males) were selected for blood alcohol estimation. A blood alcohol level of 0·150% or more was found in 14 of these 22 cases.

Drowning.

There were 417 deaths from drowning during the period under survey. In 21 instances a blood alcohol estimation was made; 17 of these tests showed an alcohol concentration of 0·150% or more. Such a finding may help to explain why a man who is known to be a good swimmer succumbs when he goes for a swim or accidentally falls into the water.

Falls.

There were 357 deaths from falls; this figure includes those persons who fell down stairs, fell from a building, etc. Of 47 of these persons examined, 36 had alcohol in the blood. In 24 cases the alcohol content exceeded 0·150%.

Railway Fatalities.

There were 123 fatal accidents associated with trains; either the individual fell when attempting to board a moving train or he was found on a railway line after having been struck by a train.

TABLE IV.

Coroner's Cases, 1951 to 1956 (Inclusive).

Type of Subject or Accident.	Total Persons Killed.	Total Tested.	Number of Subjects in Each Blood Alcohol Range (*per Centum*).					
			Nil.	0·010 to 0·100.	0·101 to 0·150.	0·151 to 0·200.	Over 0·200.	Over 0·100.
Drivers of vehicles ..	664	197	67	29	28	33	40	101
Passengers	378	41	9	8	3	8	13	24
Pedestrians	927	171	56	22	14	19	60	93
Burning	155	22	3	4	1	5	9	15
Drowning	417	21	3	0	1	4	13	18
Falls	357	47	11	9	3	4	20	27
Suicides	931	39	11	10	5	5	8	18
Train accidents	123	24	6	3	2	3	10	15
Murder	120	41	10	9	3	4	15	22
Alcohol poisoning ..	46	46	4	5	4	3	30	37

TABLE V.
Coroner's Cases, 1951 to 1956 (Vehicle Drivers).

Type of Vehicle.	Number of Drivers Killed.	Number of Drivers Examined.	Number of Victims in Each Blood Alcohol Range (*per Centum*).					
			Nil.	0·01 to 0·100.	0·101 to 0·150.	0·151 to 0·200.	Over 0·200.	Over 0·100.
Motor-car	268	103	27	9	17	21	29	67
Motor-bicycle	263	72	25	16	10	11	10	31
Bicycle	133	22	15	4	1	1	1	3
Total	664	197	67	29	28	33	40	101

These cases do not include deaths at level crossings, which we have dealt with under the heading of road accidents. Blood alcohol estimations were made in 24 cases, in 13 of which the alcohol content was above 0·150%.

Murder.

Of 120 murders during the years 1951 to 1956, blood alcohol tests were carried out on 41 of the victims. In 19 instances the level of alcohol in the blood reached or exceeded 0·150%.

Alcoholic Poisoning.

The cases listed as alcoholic poisoning include those persons who were known to have been an on alcoholic bout or to have been methylated spirits drinkers, or who were found, for example, in a park with wine bottles close by. Of these 46 subjects, 33 showed an alcohol level of 0·150% or more.

Acknowledgements.

We wish to acknowledge the assistance of other members of the coroner's staff in the collection of the data presented here. We also wish to thank the secretary of the Crown Law Department for permission to publish this paper.

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MURRAY VALLEY ENCEPHALITIS IN THE MURRAY VALLEY, 1956 AND 1957.[1]

By S. G. ANDERSON,[2] N. V. DOBROTWORSKY[3] AND W. J. STEVENSON,[4]
with the technical assistance of
ROSEMARY HORTON,
Melbourne.

DURING the late summer months of January to April, 1951, there was an epidemic of Murray Valley encephalitis (M.V.E.) in the Murray Valley and western New South Wales (Anderson, 1952). The heaviest incidence of infection was in the Mildura district in north-western Victoria. Since 1951 a careful watch has been kept for a recurrence of the disease in Mildura. The virus was apparently absent from the Murray Valley during 1952, 1953 and 1954, and no clinical case of the disease was recorded during 1955.

This paper reports a study of M.V.E. in northern Victoria during 1956 and 1957. During 1956 there was a number of human infections near Mildura, of which two and perhaps three produced clinical signs. All the evidence indicated that the virus was absent from Mildura during 1957.

[1] This work was supported in part by a grant from the National Health and Medical Research Council, Canberra.

[2] Walter and Eliza Hall Institute of Medical Research and the Department of Experimental Medicine of the University of Melbourne.

[3] Department of Zoology, University of Melbourne.

[4] Victorian State Health Department.

Materials and Methods.

The methods in current use in these laboratories have been described previously (Anderson, 1953; French, 1952). The complement fixation test is an overnight fixation with the use of a saline extract of baby mouse brain as antigen. In serum neutralization tests, diluent for virus was undiluted unheated normal rabbit serum.

Evidence of Virus Activity during 1956.

Clinical Human Disease.

Two cases of encephalitis were diagnosed serologically as probably due to M.V.E. virus.

A., a girl, aged 29 months, was admitted to Fairfield Infectious Diseases Hospital, Melbourne, on March 18, 1956, with a history of four weeks' illness. She lived at Karadoc, a small village on the banks of the Murray, 24 miles south-east of Mildura. On January 17, 1956, she had accompanied her parents to Victor Harbour in South Australia, and had returned along the Murray river to reach her home at Karadoc on February 6. On February 16 she became ill and was admitted to the local hospital. The course of her illness was consistent with a diagnosis of severe encephalitis; she recovered, with severe residual paralysis particularly in the legs. Her serum taken on March 19 contained antibody to M.V.E. virus, neutralizing more than 10^6 LD_{50} of virus in the baby mouse injected intraperitoneally, inhibiting hæmagglutinin at a dilution of 1:1280, and fixing 3 MHD of complement at a dilution of 1:40.

On this evidence it was assumed that the child had suffered an attack of M.V.E.; she was probably infected either on February 5 at Lake Bonney in South Australia, or at Karadoc on or after February 6. The incubation period would be 10 days or less if she was infected at Karadoc.

B., a boy, born at Mildura about December 28, 1955, went to his home at Robinvale two weeks later. Robinvale is on the Murray river 80 miles south-east of Mildura. The patient did not move from his home before March 25, 1956, when he developed mild encephalitis for which he was admitted to the Mildura Base Hospital. He recovered completely, and serum taken on May 20 neutralized at least 1000 LD_{50} of virus, inhibited hæmagglutinin at a dilution of 1:160, and fixed complement at a dilution of 1:15.

A third child in Mildura, a girl, aged 13 years, gave a typical history of moderately severe encephalitis on February 14, 1956, from which she recovered without sequelæ, but no convalescent serum was available.

Serological Survey.

In April, 1956, serum was collected from humans living in the Mildura district and from domestic fowls less than 12 months old living within 500 yards of the river or its backwaters near Mildura, and in Shepparton in northern Victoria.

Of 81 sera obtained from adult humans in Mildura, six had complement-fixing antibody at a titre of 1:10 or greater. Of 21 sera from adults and children at Karadoc,

nine gave similarly positive results. The presence of neutralizing antibody against at least 100 LD_{50} of M.V.E. virus was confirmed in all the human sera which carried complement-fixing antibody.

The domestic fowl sera were examined by a neutralization test against 100 LD_{50} of M.V.E. virus by intraperitoneal inoculation of suckling mice. Of 21 fowls bled at Karodoc, 18 gave positive results; of 22 fowls bled along the river just south east of Mildura, 12 gave positive results; but none of 17 fowls living on the river bank just west of Mildura carried neutralizing antibody to M.V.E. No M.V.E. antibody was present in the sera of 23 domestic fowls living near Shepparton in north-central Victoria.

On April 21, 1956, 15 cows aged from one to three years were bled on a dairy farm at Karadoc. They normally grazed on the river bank next door to the home of the first patient discussed above (A.). Eleven of the bovine sera carried neutralizing antibody to at least 100 LD_{50} of M.V.E. virus, but none of these sera at a dilution of 1:10 fixed complement in the presence of M.V.E. antigen. Four of the bovine sera were titrated, giving endpoints of $>10^0$, $10^{0\cdot8}$, 10^1 and $10^{1\cdot8}$.

In a parallel study of both birds and humans, Warner (1957) has obtained evidence of M.V.E. virus along the South Australian Murray in this summer.

It is concluded that M.V.E. virus spread in the Murray Valley during the summer of early 1956. It infected humans and domestic fowls, but its distribution was patchy. Karadoc was an area of particularly heavy incidence, and in this settlement there was one severe human infection. No evidence was obtained of the presence of M.V.E. virus in north-central Victoria at this time.

Investigations during 1957.

Towards the end of 1956, it was anticipated that there might be an outbreak of M.V.E. in the Mildura district in the summer of 1956-1957. A particularly close watch was therefore kept for clinical cases of M.V.E. in Mildura. Nothing was seen suggestive of M.V.E.

Domestic fowl sera were taken in Mildura during April, 1957, from young flocks most heavily exposed to riverine mosquitoes. Of 102 sera gathered by Dr. E. L. French and by Mr. P. Saunders of Mildura, none carried neutralizing antibody to M.V.E. virus.

In the expectation of an outbreak of M.V.E. in the area, a field collection of mosquitoes had been arranged near Mildura. This collecting extended from December 16, 1956, to February 4, 1957, with a short interval at Christmas when no mosquitoes were collected. Most of the mosquitoes were taken feeding on humans, cows, horses and domestic ducks. During the period of intense mosquito activity (7.30 p.m. to 10.0 p.m.) ducks were found to be more attractive than domestic fowls as bait for mosquitoes.

The following major species were taken: *Culex annulirostris* (25,169 individuals), *C.p. australicus* (246), *C. fatigans* (237), *C. globocoxitus* (61) and *C. molestus* (9); *Aëdes camptorhynchus* (4176), *A. vigilax* (2165), *A. vittiger* (986), *A. theobaldi* (99), *A. alternans* (35); *Mansonia linealis* (111); *Tripteroides atripes* (255); *Anopheles annulipes* (3200). Although *A. annulipes* was very abundant, this species was largely avoided, as it had been shown in the laboratory to be incapable of carrying M.V.E. virus.

Of the species *C. annulirostris*, 4000 individuals captured in Mildura were examined in the laboratory for virus by the inoculation of batches, each of 100 mosquitoes, on to the chorio-allantoic membrane of fertile hen eggs and intraperitoneally in suckling mice. No M.V.E. virus was isolated by these procedures. When the results of the above-mentioned serological survey became available, examination of the mosquitoes was discontinued.

It was concluded that M.V.E. virus was not present near Mildura during the summer of 1956-1957.

Discussion.

Two points call for discussion—the finding of neutralizing antibody in bovine serum, and the relation of rainfall to the presence of M.V.E. virus in the Murray Valley.

Complement fixation studies on bovine sera in 1951 failed to discover antibody (Anderson, 1952), and it was assumed then that bovines were not susceptible to the virus. The present findings strongly suggest that cows are readily infected with M.V.E. virus, and develop neutralizing antibody but perhaps not high-titre complement-fixing antibody. Sabin *et alii* (1947) and Netter *et alii* (1956) have described the finding in bovine serum of neutralizing antibody to Japanese B virus, but the presence of only low-titre complement-fixing antibody.

Kissling *et alii* (1956) reported Venezuelan equine encephalomyelitis virus in the milk of infected mares, and Reagan *et alii* (1956) have observed similar behaviour of West Nile virus in hamsters. Relevant findings may be the growth of influenza A and Newcastle disease virus (N.D.V.) in the mammary gland of cows, reported by Mitchell *et alii* (1953) and confirmed by us, and our previously unreported observation that N.D.V. and influenza A virus will multiply in the mammary gland of guinea-pigs after injection into the teat canal. These observations raise the question as to whether milking cows may excrete M.V.E. virus in their milk after natural infection with the virus.

The virus of Murray Valley encephalitis is believed to persist in the tropics of northern Australia or the islands to the north of Australia (Anderson, 1954). Anderson *et alii* (1952) described complement-fixing antibody in New Guinea natives, and in the serum of natives from the Gulf of Carpentaria in 1951. Miles *et alii* (1956) found complement-fixing antibody in the serum of natives in the Northern Territory of Australia during 1954 and in that of young fowls at the same time. This indicated the presence of M.V.E. or a related virus there during 1953-1954. Ludford and Cook (1957) found antibody in the serum of horses, which must have been infected in North Queensland during 1954 with M.V.E. or a related virus. French *et alii* (1957) isolated M.V.E. virus from a fatal infection in a Papuan native in May, 1956, and Anderson *et alii* (1958) detected neutralizing antibody in human and chicken serum in New Guinea in 1956.

Clinical cases of M.V.E. have been reported from the Murray Valley in south-eastern Australia only during the summers of early 1917, 1918, 1925, 1951 and 1956. The virus is thought to be brought south by birds which migrate from the north to south-eastern Australia in the spring; and an abundance of mosquitoes along the flight lines is probably necessary to allow the survival of virus in the flocks of birds.

Anderson and Eagle (1953) and Miles *et alii* (1953) pointed out that, prior to 1953, each epidemic year had been preceded by very heavy falls of spring rain in eastern Australia. They believed that this might be a crucial factor in determining the southerly movement of virus. Experience during 1955, 1956 and 1957 does not completely support this view. The spring rainfall in eastern Australia during 1955 was heavier than normal, but was not so high as believed necessary to bring virus south. Yet virus appeared in the Murray Valley during early 1956. The following year, during the spring of 1956, rainfall in eastern Australia was above normal and resulted in an all-time record high flood at Mildura at Christmas time (1956). M.V.E. did not appear in the following months.

While the amount of spring rainfall may be important, other factors, such as timing and extent of surface flooding and ambient temperature, may also modify the pattern of bird migration and the breeding of mosquitoes along the flight lines. It is hoped that current bird-banding studies by the Wild Life Survey Section of the Commonwealth Scientific and Industrial Research Organization may contribute to an understanding of this problem.

Summary.

Clinical and serological evidence indicates that M.V.E. virus spread in the Murray Valley in the summer of 1955-1956, but not during the summer of 1956-1957.

This does not entirely support the previous hypothesis that heavy spring rainfall in eastern Australia is the crucial factor causing the spread of virus to the Murray Valley.

Acknowledgements.

Field work of this nature is not possible without the liberal cooperation of many people. We are very grateful for the assistance of medical practitioners and non-medical enthusiasts who did much to help us. In particular we should like to mention the late Dr. F. R. Cawthorn, also Dr. P. G. Barker, Dr. T. L. Barker, Dr. J. Begg, Dr. R. P. Cleary, Dr. E. L. French, Mr. H. Frith, Mr. A. Gillies, Mr. J. Lillywhite and staff members of the Commonwealth Meteorological Bureau, Melbourne, Dr. H. McLorinan, Mr. F. Ratcliffe, Mr. P. Saunders, Dr. K. Uhd and Mr. K. Unmack. The patient A. was sent to Melbourne on the advice of Dr. P. Colville. Dr. K. R. Brennan, the Chief Health Officer, and officers of the Victorian State Health Department gave us invaluable assistance throughout this work.

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Reviews.

Röntgendiagnostik: Ergebnisse 1952-1956. Edited by H. R. Schinz, R. Glauner and E. Uehlinger; 1957. Stuttgart: Georg Thieme Verlag. 10¼" × 7¼", pp. 604, with 545 illustrations. Price: DM 139.

THE book is a report of a team on the advances in X-ray diagnosis during the years 1952 to 1956. Each contribution is written by an expert in his field. The 545 illustrations are of excellent quality throughout. R. Glocker, in his timely contribution on protective measures in X-ray diagnosis, discusses international definitions of the permissible dose and the measures employed to achieve protection of patients and personnel. Brocher contributes to the diagnosis of disorders of the vertebral column, and E. Uehlinger describes benign and semi-malignant cystic bone tumours. Zdansky discusses the role of the radiological examination of the heart in the assessment of cardiac function. R. Janker, in a contribution discussing angio-cardiography of the congenital abnormalities of the heart, presents serial exposures of the heart and large vessels of rare technical perfection and beauty. The three contributions by Wellauer on the abdominal aorta, the peripheral arteries and the venous system are of great importance, particularly his original study of the portal system. The chapters written by Uehlinger and Schoch dealing with pulmonary fibrosis, the Hamman-Rich syndrome with pulmonary manifestations of collagen diseases, on the vanishing lung and on the middle lobe syndrome are particularly noteworthy. The studies of Prévôt deal with benign hypertrophy of the pylorus in adults, including the small carcinoma of the stomach and prolapse of gastric mucosa. His contribution on cholangiography with "Biligrafin" illustrates beautifully various pathological conditions. Cholangiography during operation is demonstrated by W. Hess.

The book as a whole, superbly illustrated, containing complete bibliographies, is of great importance to every reader interested in diagnostic radiology.

Medical Treatment. By Kenneth MacLean, M.A., M.D., F.R.C.P., with chapters on the tropical diseases by Colonel W. R. M. Drew, C.B.E., F.R.C.P., D.T.M. & H.; 1957. London: J. and A. Churchill, Limited. 9¾" × 6", pp. 704. Price: 50s. (English).

DR. MACLEAN, Physician to Guy's Hospital, is the author of this book of 651 pages. He has included only two chapters, those dealing with tropical diseases, written by another hand; these are by Colonel W. R. M. Drew. Dr. MacLean has designed the book so that it may be of value to general practitioners, house officers and students.

No discipline within medicine has changed more since the last war than has therapeutics. Drugs with highly specific actions, both beneficial and toxic, have replaced many traditional remedies. The prescribing doctor is increasingly taught to be highly critical in his evaluation of the effects of treatment. Indeed, an appreciation of the importance of the controlled therapeutic trial is perhaps one of the greatest advances in medicine in our time. Add to this the increasing use of the metric system in prescribing and the multiplicity of trade names for similar substances, and it is clear that the lot of an author of a book on treatment is a hard one.

Under the circumstances, Dr. MacLean has done splendidly. It is true that the difficulties mentioned have left their mark in his writing. For instance, the use of minims and millilitres becomes a little mixed at times; five pages on artificial pneumothorax perhaps place an emphasis where it would rightly have been 10 years ago; and when good therapeutic trials have been made, it would be nice to see reference made to them. However, the general excellence of the text far outweighs such criticisms of detail, which future editions may meet. The treatments recommended appear to be ones whose place is established in current practice, and the book will be of real value to those for whom it was written, and also to the consultant who wishes to keep abreast of the times.

Biochemistry of Some Peptide and Steroid Antibiotics. By E. P. Abraham. New York: John Wiley and Sons, Inc. London: Chapman and Hall, Limited. 4¼" × 7¼", pp. 112, with many illustrations. Price: $3.00.

THE Ciba Foundation is now endowing lectures in microbial biochemistry at the Rutgers University, New Jersey, U.S.A. The second series of lectures was given in 1957 by E. P. Abraham, and is now published under the title "Biochemistry of Some Peptide and Steroid Antibiotics".

The book is divided into three chapters: "The Bacitracins", "The Cephalosporins" and "Structural and Functional Relationships of the Bacitracins and Cephalosporins to other Antibiotics". The first chapter deals with the isolation of several of the bacitracins from bacterial cultures, and gives a very complete account of investigations into their chemical structure.

The bacitracins are sulphur-containing polypeptides with unusual structures. The chemical investigations described are of a very high order, new techniques having had to be developed. The bacitracins are used to a limited extent clinically; but all that is said about their antibiotic activity is: "It seems likely that a reaction between a chemically labile centre in the molecule and a component of the bacterial cell is responsible for the powerful bactericidal properties of this antibiotic."

The second chapter deals with two families of antibacterial substances which are formed by certain members of the genus *Cephalosporium*. The members of the first group, the *p* Cephalosporins, are steroids. Cephalosporin N is a complex polypeptide, a new type of penicillin. The chemical structure of these substances was investigated in detail. Although they are very active antibiotics, they cannot yet be prepared in sufficient quantities for clinical use.

The contents of the third chapter are described in the title.

This is a masterly piece of work, not only in the nature of the chemical investigations, but also in the presentation of results. However, it can be read with profit only by those with the requisite knowledge of advanced organic chemistry. There is little of use to the medical man.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"A Century of International Ophthalmology (1857-1957)", written at the request of the International Council of Ophthalmology by Sir Stewart Duke-Elder; 1958. London: Henry Kimpton Press. 8¼" × 5", pp. 94, with illustrations. Price: 12s. 6d. (English).

Covers the period since the first International Congress of Ophthalmology was held in Brussels in 1857.

"The Year Book of Ophthalmology (1957-1958 Year Book Series)", edited by Derrick Vail, B.A., M.D., D.Oph., F.A.C.S., F.R.C.S.; 1958. Chicago: The Year Book Publishers, Inc. 7½" × 5", pp. 424, with 90 illustrations. Price: $7.50.

One of the Practical Medicine Series of Year Books.

"Psychoprophylactic Preparation for Painless Childbirth", by Isidore Bonstein, M.D.; 1958. London: William Heinemann (Medical Books), Limited. 8" × 5", pp. 144, with illustrations. Price: 12s. 6d. (English).

The author states that this book "is an adaptation and sometimes a translation of the few French publications concerning psychoprophylactic painless childbirth".

"The Extra Pharmacopœia (Martindale): Incorporating Squire's Companion"; Volume I, published by direction of the Council of the Pharmaceutical Society of Great Britain; Twenty-Fourth Edition; 1958. London: The Pharmaceutical Press. 7¾" × 4¾", pp. 1728. Price: £3 5s.

This edition includes references to changes made in the British Pharmacopœia 1958.

"The Impact of the Antibiotics on Medicine and Society", Monograph II, Institute of Social and Historical Medicine, The New York Academy of Medicine, Iago Galdston, M.D., Editor; 1958. New York: International Universities Press, Incorporated. 8¾" × 5¾", pp. 232, with illustrations. Price: $5.00

This is "essentially a socio- and medical-historical inquiry into the *advent* of antibiotics".

"Standard Height-Weight Tables for Australians", approved by the Nutrition Committee of the National Health and Medical Research Council; 1957. Canberra: Australian Institute of Anatomy. 9¾" × 6", pp. 12, with eight illustrations. Free on application to the Australian Institute of Anatomy, Canberra.

Average heights and weights for various age groups are set out in the form of charts. "It is not claimed that these charts have any significance beyond acting as standards." They are based on measurements made under the direction of the Medical Officer of Health in the city of Melbourne between the years 1936 and 1946.

"A.M.A. Scientific Exhibits, 1957", sponsored by the Council on Scientific Assembly, American Medical Association; 1957. New York: Grune and Stratton, Incorporated. 10¾" × 8", pp. 480, with illustrations. Price: $15.00.

Selected exhibits from those presented at the 1957 annual meeting of the American Medical Association.

"Dynamics of Psychotherapy: The Psychology of Personality Change", by Percival M. Symonds, Ph.D.; Volume 3; 1958. New York and London: Grune and Stratton. 9" × 6", pp. 642. Price: $6.50.

The last of three volumes on dynamics of psychotherapy.

"Methods of Biochemical Analysis", edited by David Glick; Volume 6; 1958. New York and London: Interscience Publishers, Inc. 9" × 5¾", pp. 368, with many illustrations. Price: $8.50.

Contains 10 articles on recent work.

"Psychopathology of Communication", edited by Paul H. Hoch, M.D., and Joseph Zubin, Ph.D.; 1958. New York and London: Grune and Stratton, Inc. 8¾" × 5¾", pp. 318, with illustrations. Price: $6.75.

The proceedings of the forty-sixth annual meeting of the American Psychopathological Association, held in New York City, June, 1956.

"Mental Health in Home and School"; 1958. London: World Federation for Mental Health; H. K. Lewis and Company, Limited. 8¾" × 6", pp. 318. Price: £2 5s. (English).

Papers presented at the ninth annual meeting of the World Federation for Mental Health, Berlin, Germany, August, 1956.

"Notes on Special Diets for Use in Hospitals", prepared by the Nutrition Section, Commonwealth Department of Health, Canberra; 1957. Canberra: Australian Institute of Anatomy. 9¾" × 6", pp. 48. Free on application to the Australian Institute of Anatomy, Canberra.

Prepared at the request of a number of tutor sisters and other nurses, these notes provide details of special diets with information on the normal diet and instructions on cooking and otherwise preparing diets.

"Physics for the Anæsthetist: Including a Section on Explosions", edited by Sir Robert Macintosh, D.M., F.R.C.S.E., F.F.A.R.C.S., M.D., W. W. Mushin, M.A., M.B., B.S., F.F.A.R.C.S., and H. G. Epstein, M.A., Ph.D., F.F.A.R.C.S.; Second Edition; 1958. Oxford: Blackwell Scientific Publications. 8¾" × 5¾", pp. 455, with many illustrations. Price: 60s. (English).

The authors are practising anæsthetists, who "disclaim any pretence at being physicists".

"Endemic Goitre: Select Bibliography on World Distribution"; 1958. London: Chilean Iodine Educational Bureau. 7¾" × 5¾", pp. 110. Price not stated.

The title is self-explanatory. The papers selected deal primarily with geographical distribution and incidence; but many of them, especially the more recent, contain facts about causation and the results of local prophylactic measures.

"Topics in Microbial Chemistry: Antimycin, Coenzyme A, Kinetin and Kinins", by F. M. Strong; 1958. New York: John Wiley and Sons, Inc. London: Chapman and Hall, Limited. 7¾" × 4¾", pp. 178, with illustrations. Price: $5.00.

Three lectures which are intended "to present a capsule view of several individual research products and to illustrate how the use of certain experimental techniques contributed to such progress as was made".

"Children Under Five: The Results of a National Survey Made by a Joint Committee of the Institute of Child Health (University of London), the Society of Medical Officers of Health and the Population Investigation Committee", by J. W. B. Douglas and J. M. Blomfield; 1958. London: George Allen and Unwin, Limited. 8¾" × 5¾", pp. 180, with eight illustrations. Price: 21s.

One of the "Studies in Society", edited by Ruth and David Glass.

The Medical Journal of Australia

SATURDAY, JULY 5, 1958.

A REPORT ON THE ESTABLISHMENT OF A SECOND MEDICAL SCHOOL IN N.S.W.

THE Advisory Medical Committee appointed by the N.S.W. Minister for Health in December, 1957, to report on the establishment of a second medical school in N.S.W. has presented a report to the Minister dated May, 1958. It will be remembered that the appointment of this committee followed the publication and acceptance by the Commonwealth Government of the report of the Committee on Australian Universities under the chairmanship of Sir Keith Murray. This report stated that there appeared to be "every justification for the establishment of a second medical school in New South Wales", that there was "much to be said for placing this in the New South Wales University of Technology", and that if the latter institution came to "assume many of the features of a traditional university . . . it might more appropriately become known as the University of New South Wales". The Advisory Medical Committee was asked to consider and to make recommendations relating to the following matters:

(1) the order and nature of those measures which are essential to the establishment of the proposed medical school;

(2) the composition of the proposed medical curriculum at the Undergraduate, Honours and Post-Graduate levels. Consideration will be given to those particular anomalies which are referred to in the Report of the Committee on Australian Universities;

(3) any other matters relating to the standard of medical education in New South Wales which arise from the above.

Dr. K. W. Starr was installed as chairman of the Committee, with Professor J. P. Baxter as deputy chairman and Mr. A. J. T. Ford as secretary. The other members were Mr. J. W. Goodsell, Dr. A. B. Lilley, Professor B. T. Mayes, Dr. W. A. Conolly, Dr. F. C. Courtice, Dr. W. Freeborn, Professor W. K. Inglis, Dr. P. J. Kenny, Dr. K. Kirkland, Dr. H. Kramer, Dr. C. G. McDonald, Dr. S. D. Meares, Dr. I. D. Miller, Dr. F. L. Ritchie and Dr. L. T. Shea. The report has been signed by all members of the Committee except Professor W. K. Inglis and Dr. W. Freeborn, who submitted minority reports; Dr. C. G. McDonald's signature was subject to reservations in a memorandum. Neither this memorandum nor the minority reports are included with the report of the Committee.

Elsewhere in this issue we publish Part 3 of the report. This is the Committee's own summary of its recommendations, and it contains the essence of the report. The recommendations are, to say the least, controversial; the most provocative relate to the shortening of the medical course, the introduction of an extra period of training for an honours degree and for the degree of bachelor of surgery, the provision of a small University hospital within the University grounds, and certain aspects of post-graduate training. There will be general agreement with the recommendation that the number of students to enter the Faculty of Medicine should be restricted in accordance with available staff and facilities; it is to be hoped that the State Government, if it accepts this principle, will see that it becomes applicable to the University of Sydney also. The shortening of the course is another matter. Probably most people will agree with the desirability of lightening the course and of teaching principles rather than cramming students with masses of facts; but it is difficult to conceive of even the basic ground being covered in less than the period at present generally accepted. That the shortened period recommended does not conform with the Recommendations of the General Medical Council is a serious defect, and it is most difficult to understand the airy way in which the report dismisses the possible difficulties in reciprocity. The paradox of the matter is that the report describes its five-year course (*plus* the pre-registration year) as affording "a proper training for the general practitioner", and then recommends a further period of two years' special training for those who are to qualify in surgery. There is much to be said for providing surgical training for the general practitioner, and the Committee is to be commended for at least putting forward a positive plan to this end; but it is farcical to combine it with talk about shortening the course. In moving away from the widely accepted view that the undergraduate curriculum should be aimed at providing basic training, irrespective of whether the graduate is to become a general practitioner or a specialist, the Committee puts itself in a peculiar position; for the traditions of Australian medical practice require a degree of surgical proficiency on the part of the average general practitioner. Who then is to be satisfied with the lowly M.B. degree? Not the embryo physician, who will certainly aim to spend the extra year in quest of an honours degree. Not, we hope, the embryo general practitioner with an interest in medicine rather than surgery; for surely not even the most enthusiastic surgeon would suggest that, whether in specialist or general practice, the wisdom of the physician is more quickly or easily acquired than the dexterity of the surgeon. Let us be frank and admit that, apart from a species of substandard doctor alien to the Australian tradition, the Committee has recommended a lengthening of the medical course for the "proper training of the general practitioner". Looked at in that way, the recommendations have merit, but for practical purposes we shall probably have to compromise with the old-fashioned period of six years.

One or two observations on post-graduate training seem to be called for. The first relates to the repeated references by the Committee to the comments of the Murray Report on "the weakness of honours and post-graduate schools". The Committee comments: "This is a characteristic of all the Faculties of the Universities and is not peculiar to Medicine." However, reference to the Murray Report reveals no mention of Medicine at all in this context

beyond a commendatory reference to the facilities for post-graduate training and research in the medical sciences at the Australian National University in Canberra; most of the discussion has to do with Arts and Science. Undoubtedly there are deficiencies in medical post-graduate training, but it would be wrong to under-estimate the value of what is being done and has been done by existing post-graduate organizations with limited facilities. The greatest need in Sydney is for a post-graduate hospital. As was pointed out to the Committee by the chairman of the Hospitals Commission, the Prince Henry Hospital of 700 beds was incorporated by Act of Parliament as a post-graduate hospital. If the Committee can persuade the State Government to have this implemented, that will be a good thing—provided always, of course, that its facilities are made available to the Post-Graduate Committee in Medicine in the University of Sydney, which has been battling for them for years.

On the question of the 200-bed University hospital within the University grounds, associated with a larger general hospital near by only for certain matters of administrative convenience, much might be said. However, it should suffice to point out the danger to effective undergraduate training of isolating the dean and clinical professors and their units from the hurly-burly of the general hospital and from contact with their practising colleagues. Ivory towers only too readily grow in the mind; it would be a calamity to build one deliberately of bricks and mortar.

This is a disturbing report. In its main body is much that we can agree with and commend; but its recommendations are its essence, and with a good part of them we have had to disagree. The most patent fault with it is that it has been too hastily compiled. We cannot believe that the many able and experienced men who have put their signatures to this document, with its half-developed ideas and loose ends, would have done so if they had had time to consider the matter fully and call sufficient evidence. It is tempting to hope that it is only a preliminary report, but there is nothing to indicate this. The one consoling thought is that this is a report to the Government, not to the N.S.W. University of Technology; the Council of the University is surely too experienced to bundle a promising new faculty into such a hastily made Procrustean bed without looking for further advice. Meantime, the problems of overcrowding in the University of Sydney cry out for a solution, and it is not too soon to start thinking about a third medical school on the North Shore or at Newcastle or even at Parramatta.

Current Comment.

BIRTHDAY HONOURS.

THIS year's Birthday Honours conferred on Australian medical men[1] are of exceptional interest because of the signal distinction bestowed by the Queen on Sir Macfarlane Burnet in making him a member of the Order of Merit. This order is limited to 24 members, with the addition of foreign honorary members. Whitaker's Almanack states: "Membership is denoted by the suffix O.M., which follows the first class of the Order of the Bath and precedes the letters designating membership of the inferior classes of the Bath and all classes of the remaining Orders of Knighthood". The honour is therefore both high and exclusive. Only two other Australians have enjoyed it—Gilbert Murray, the classical scholar, and Samuel Alexander, the philosopher; Sir Macfarlane Burnet is the first Australian living and working in Australia to be so honoured. Members of the medical profession in this country not only will approve and applaud this award, but also will be grateful for the lustre thus shed on his profession by a distinguished medical man.

There will also be general pleasure at the other awards. Of the three new knights bachelor, Sir John Eccles, F.R.S., Professor of Physiology in the John Curtin School of Medical Research at the Australian National University, is well known for his work in neurophysiology; Sir Benjamin Edye, of Sydney, has long been honoured as a man and as a surgeon by those who know him as a colleague and by a great number of patients and others; Sir Kenneth Fraser is distinguished both as an army medical officer and as a pædiatric surgeon, whose worth was recognized by his colleagues in electing him President of the Australian Pædiatric Association for the current year. Group Captain R. B. Davis, R.A.A.F., who has received the O.B.E. in the military list, is Command Medical Officer of Maintenance Command. Dr. S. A. McDonnell, of Brisbane, who has received the O.B.E. (Civil Division) for services to the community in the Balonne area of Queensland, is President-Elect of the Queensland Branch of the B.M.A.

The honours received by New Zealand medical practitioners are also of interest. Knighthoods have been conferred on Professor F. H. Smirk, Professor of Medicine in the University of Otago, who is well known for his work on hypertension, and on Dr. C. R. Burns, a consultant physician of Wellington; both have received the K.B.E. Dr. Cecily Mary Wise Pickerill, of Wellington, has received the O.B.E. (Civil Division) for services in the field of plastic surgery.

[1] M. J. AUSTRALIA, 1958, 1:892 (June 21).

AN HONOUR FOR PROFESSOR FRANK FENNER.

PROFESSOR FRANK FENNER, of the Australian National University, Canberra, was elected a Fellow of the Royal Society of London on March 21, 1958. We offer him our sincere congratulations on this honour, which is shared by only two other medical men in Australia, Sir Macfarlane Burnet and Sir John Eccles. Professor Fenner graduated in medicine from the University of Adelaide in 1938 and received his doctorate in medicine of the same university in 1942. During the second World War he served as a pathologist and malariologist with the A.I.F. in the Middle East and South West Pacific Area and was awarded the M.B.E. in 1944. He was appointed to the chair of microbiology in the Australian National University in 1949.

MEDICAL BENEFITS: ITEMIZED ACCOUNTS.

IN the report of the last meeting of the Federal Council of the British Medical Association in Australia, published in THE MEDICAL JOURNAL OF AUSTRALIA of April 12, 1958, at page 503, in the discussion on the identification of services in itemized accounts relating to medical benefits, reference is made to the departmental suggestion that medical practitioners be asked to include in their accounts "sufficient details to permit ready identification of the services rendered and not to regard the inclusion of the schedule item number as sufficient".

The Acting Director-General of Health, Dr. H. E. Downes, has now written to say that this suggestion is accurately reported and is in accordance with Dr. Metcalfe's letter to the General Secretary of the Federal Council of December 16, 1957. However, the officers of the department have been informed by medical prac-

titioners that in some quarters it has been taken to mean that the department desires that doctors' accounts should show the nature of the ailment, particularly in the case of Item 1—consultations and visits.

This is not so. Dr. Downes points out that the department has never sought to have the nature of the illness stated in doctor's accounts for consultations or any other professional services. It has asked that the account should state the dates on which the professional services were rendered and the nature of those services (preferably described by references to the terminology used in the medical benefit schedules) so that the benefits payable may be correctly assessed. In addition to the description of the service, the inclusion of the schedule item number is of assistance—e.g., consultation or visit—Item 1.

THE DIAGNOSIS OF ORGANIC BRAIN-STEM DISEASE BY MEANS OF A NEW HEARING TEST.

HITHERTO the emphasis has been laid on the vestibular apparatus when tests have been conducted on the functioning of the eighth cranial nerve in order to throw light on lesions of the central nervous system. Only very rarely have disturbances of hearing been proved to arise from central defects. Joseph Matzker and Josef Ruckes, of the Mainz University,[1] have devised a simple hearing test which can pick out stem lesions as distinct from cerebral. By well-known physical filters two separate portions of a word or short sentence are separated out; one consisting of 500 to 800 cycles per second is sent into one ear, the other of 1500 to 2400 cycles per second is sent into the other ear. Each alone is unintelligible; but if the medial geniculate body is intact, the two coalesce, and the "addition" is forwarded to the cortex and is comprehended. Autopsies have confirmed the claim that brain stem lesions can be diagnosed in this manner, even when ordinary hearing tests have yielded nothing abnormal.

"DIARY FOR THE MONTH."

FOR many years a section on the last page of the Journal has been devoted to "Diary for the Month". This is a list of dates of current meetings of the Branches of the British Medical Association throughout Australia, inserted as a service to the Branches and justified only so long as they require it. Some time ago a suggestion came from one of the Branches that it might be discontinued "as the scheduled dates of meetings are often changed and as in any case the diary does not include all meetings". The only way to decide this was to refer the matter to the other Branches. Three Branches agreed with the suggestion, two disagreed. One of the two which disagreed, a peripheral Branch, had found it useful at times to know the date of a particular Branch meeting in another State.

This seems a clear case in which majority rule does not apply. If only two Branches find the Diary useful, we shall continue it. At the same time all Branches are asked to cooperate in its compilation. If they do not keep their information accurate and up to date, the Diary is misleading, and the Branches which are not interested do a disservice to those which are. A reliable Diary, on the other hand, will be useful to everybody on occasion.

MOTOR CYCLISTS' HELMETS.

THE Standards Association of Australia announces the publication for public critical review of a proposal (Document 385) to endorse the British Standard on Protective Helmets for Motor Cyclists (B.S.2001:1956) for use as an Australian standard. The request for an Australian standard originated with the National Health and Medical Research Council, and the Road Safety Council. The matter has been examined by a representative committee, and there has been general agreement that B.S.2001:1956 should be adopted as the Australian standard. The 1956 edition of B.S.2001 superseded a 1953 edition, the main difference being that the later standard incorporated a more complicated impact test, based on studies by the Road Research Laboratory in the United Kingdom. This has presented a problem, in that facilities for the new test method are not available in Australia. The committee recently decided, however, that it should not delay longer on this account, but should proceed to recommend endorsement of B.S.2001:1956, on the assumption that local manufacturers could submit samples to the United Kingdom for test, at least as an interim measure.

Copies of the British Standard (B.S.2001:1956) are available for reference at, and may be purchased from, the headquarters of the Standards Association of Australia, Science House, Gloucester and Essex Streets, Sydney, or S.A.A. branch offices in capital cities and at Newcastle, where copies of the draft proof issue may also be obtained *gratis*. Those concerned with the manufacture, supply or use of protective helmets for motor cyclists are invited to comment on the proposal. Any such comment should be forwarded to reach the headquarters of the Association not later than July 15, 1958.

THE BIBLIOGRAPHY OF MEDICAL REVIEWS.

THE third annual volume of the "Bibliography of Medical Reviews" was to be published in June, 1958, by the National Library of Medicine of the U.S.A. Review articles listed in Volume 1 and 2 were gathered as a by-product of the "Current List of Medical Literature" operation and were duplicated in the parent publication in another format. With Volume 3, however, the collection of review articles has been extended to all the current journals received by the National Library of Medicine. The result has been the inclusion in Volume 3 of approximately 600 articles not in the "Current List", along with the 2300 review articles also listed in the "Current List". The 1958 volume of the "Bibliography of Medical Reviews" is arranged by subject with a separate author index and will contain approximately 2900 references to review articles in clinical and experimental medicine and allied fields which have appeared largely in 1957. Copies of Volume 3 for 1958 are available from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C., U.S.A., at a price estimated at $1.25.

CHOLERA IN THAILAND.

THE World Health Organization, in a dispatch dated June 11, 1958, has advised that, at the request of the Government of Thailand, it has sent 500,000 cubic centimetres of cholera vaccine to that country to help combat a cholera epidemic which has already claimed more than 300 lives. More than 2000 cases have been reported in Bangkok and 17 provinces. The shipment was authorized on an emergency basis after consultation with members of the WHO Executive Board. This is the first cholera epidemic to strike Thailand in several years; the last reported case occurred there in 1951, and there had been nine cases two years previously.

There are signs that 1958 may be a bad year for cholera. Cases are running at twice last year's rate in East Pakistan (8900 as against 4000 in 1957) and in India (17,600 as against 8400), and the disease has also been reported in Cambodia (two cases) and in Burma (four cases). The designation of Thailand as a proclaimed area for cholera within the meaning of the *Quarantine Act* (see page 36) is a sharp reminder that none of these countries is far from Australia.

[1] *Deutsche med. Wchnschr.*, December 20, 1957, page 2187.

Abstracts from Medical Literature.

SURGERY.

Migration of a Hypodermic Needle.

A. M. MACARTHUR (*Brit. J. Surg.*, September, 1957) reports the case of a child of five years who was given an intramuscular injection in the course of which a number 12 hypodermic needle was broken and the fragment retained in the right buttock. X-ray examination revealed the needle fragment, and the surgeon advised that it should be left alone. An X-ray film taken three months later showed the needle to have disappeared, and further radiographs located it in the posterior basal segment of the right lower lobe of the lung. The migration had been completely symptomless and had taken place presumably via the right femoral vein. Removal of the foreign body was advised because of the danger of abscess formation and the risk of retrograde migration back into the heart. The needle was removed through a right postero-lateral thoracotomy without any great trouble.

Special Problems in Venous Thromboembolism.

W. ANLYAN AND D. HART (*Ann. Surg.*, September, 1957) review a series of 453 patients with venous thromboembolism seen over a seven-year period at the Duke University Hospital. They discuss in particular severe arterial spasm accompanying deep venous thrombosis (phlegmasia cœrulea dolens), pulmonary embolism, and the relationship between idiopathic venous thrombosis and hidden cancer. The authors describe 19 cases of arterial spasm secondary to deep venous thrombosis and they list signs and symptoms helpful in differentiating this syndrome from primary arterial occlusion. They found that sympathetic blocks were unnecessary. Heparin and slight elevation of the legs have been found to relieve the syndrome markedly within two hours unless gangrene has developed before treatment is begun. They consider that gangrene is due to massive œdema in closed fascial compartments. They examined 66 cases of pulmonary embolism. In 50% of the patients there was no evidence of peripheral venous thrombosis. Recurrent pulmonary embolism was noted in 15% of patients whilst on coumarin therapy, in six out of eight patients who had femoral vein ligation performed, and in one out of 23 patients after *vena caval* ligation. They also present their indications for *vena caval* ligation. They found no significant association between idiopathic venous thrombosis and hidden cancer.

Restoration of Function After Massive Thrombosis.

H. MAHONRER, J. CASTLEBERRY AND W. COLEMAN (*Ann. Surg.*, September, 1957) report on their attempts to restore function in major veins which have been the site of massive thrombosis. In 16 instances they performed thrombectomy and restoration of the vein lumen in the ileo-femoral or axillo-subclavian venous systems with perfect or excellent results in 12 patients, good results in two, and poor results in two. Post-operative venograms of four patients showed restored function in major veins in three of them. The authors found that this method proved a decided advantage in restoring function when there was a massive thrombosis with extensive œdema of the extremity. They think it should result in better function, with less post-thrombophlebitic œdema, than is usually obtained by other methods. They consider that it is most urgently indicated in phlegmasia cœrulea dolens where gangrene threatens. Experiments in dogs showed less venous obstruction when the clot was removed by operation than when conservative measures only were employed.

The Surgical Management of Thymic Tumours.

L. SOUTTER *et alii* (*Ann. Surg.*, September, 1957) discuss 13 patients with thymoma in regard to their treatment and the association of the tumour with certain other disorders. They consider that the frequent development of malignancy in thymomata is an indication for their removal whenever possible. Irradiation and hormonal therapy may be used as an alternative when adequate surgery is not possible. They consider that the effect of thymectomy upon *myasthenia gravis* is unpredictable, upon Cushing's syndrome is harmful, but that it may be helpful in hypoplastic anæmia and is of no known benefit in agammaglobulinæmia.

Regurgitation Cholecystitis.

A. LARGE (*Ann. Surg.*, October, 1957) states that inflammation of the gall-bladder and stone formation occur in dog and in man following the creation of a wide opening between the common bile duct and the intestine. These findings are thought to develop as a result of ascending intraluminal infection. A similar process occurs even when the intestine is anastomosed to the fundus of the gall-bladder. The author considers that whenever a wide opening is made between the common bile duct and the intestine the gall-bladder itself should be removed even though at the time it may be perfectly normal. If it is left in place it becomes inflamed and useless for any subsequent anastomosis, and stones will form in its lumen, which will require later operation and removal of the gall-bladder.

Acute Hypocalcæmia in Surgical Patients.

G. CLOWES AND F. SIMEONE (*Ann. Surg.*, October, 1957) discuss acute hypocalcæmia in patients after major surgery. They point out that circulatory failure continues to be an important cause of complications and fatalities related to major surgical operations. It is suggested that changes in blood calcium may take place in the presence of either hypoxia or hypercapnia. The authors present figures demonstrating a fall in both the total and ionized calcium levels in the blood during and after prolonged surgical operations. They found that six patients who showed total plasma calcium levels below 8·1 milligrammes per 100 millilitres or ionized calcium values below 0·8 millimol per litre, in the presence of slightly elevated serum potassium concentrations, developed hypotension which responded to the intravenous administration of calcium chloride.

Extracorporeal Circulation in Operations on Aortic Aneurysms.

D. COOLEY, M. DE BAKEY AND G. MORRIS (*Ann. Surg.*, September, 1957) state that resection of fusiform aneurysms of the thoracic aorta usually require temporary occlusion of the aorta during the period of removal of the aneurysm and its replacement by a graft. This may lead to ischæmic damage to the brain and spinal cord or left ventricular failure from the increased vascular resistance, with serious or even fatal consequences, unless some method of controlled extracorporeal circulation is used to by-pass the aneurysm during operation. The authors report a series of 32 operations for aortic aneurysm in which they used controlled extracorporeal circulation. For lesions of the ascending aorta and aortic arch, total cardio-pulmonary by-pass with a pump oxygenator was used, and carotid perfusion was performed in some cases. For fusiform and acute dissecting aneurysms of the descending thoracic aorta simple aortic by-pass without an oxygenator was used to protect the spinal cord from ischæmic damage during aortic occlusion. By the use of these methods the authors have successfully resected, with graft replacement, aneurysms located in the ascending aorta, the aortic arch, and the descending thoracic aorta.

Induced Cardiac Arrest.

C. LAM, T. GAHAGAN, C. SERGEANT AND E. GREEN (*Ann. Surg.*, September, 1957) describe a method for inducing cardiac arrest during intracardiac operations. They perfuse the coronary system with a solution of acetylcholine. The heart is resuscitated by perfusing the coronary arteries with oxygenated blood from a pump-oxygenator system. They report some 80 intracardiac operations of which 54 were for the repair of inter-ventricular septal defects and 26 were for a variety of congenital and acquired lesions of the heart. They consider that cardioplegia is a valuable aid in these complicated intracardiac operations.

Carotid Artery Occlusion.

C. LYONS AND G. GALBRAITH (*Ann. Surg.*, September, 1957) report on the surgical treatment of atherosclerotic occlusion of the carotid artery. Cerebral circulatory insufficiency, usually in the distribution of the middle cerebral artery, may result from segmental occlusion of the internal carotid artery in the neck. Previously only two cases of cure of this condition have been reported by segmental resection of the affected artery. The authors report improvement of neurological symptoms after restoration of the carotid blood flow by a prosthesis joining the subclavian artery to the patent carotid distal to the point of obstruction. They state that this affords effective restoration of carotid flow and

in no way impairs existing or potential collateral blood flow to the brain. They base their report on six patients which they have treated in this manner, four of whom had completely successful results.

Hodgkin's Disease of the Stomach.

A. JACKSON (*Am. J. Surg.*, October, 1957) states that 36 cases of primary Hodgkin's disease of the stomach have been reported in American literature, and in none of the cases was the diagnosis positively made prior to operation. The symptoms, the X-ray findings and the gross pathological picture closely resemble carcinoma of the stomach. The clinical symptoms, in general, resemble those of cancer of the stomach with certain differences. The pain, often negligible in cancer of the stomach in its early stages, may be rather severe in Hodgkin's disease and of much longer duration. Cachexia is absent and an abdominal mass is seldom noted. The diagnosis rests on histological examination. The treatment is gastric resection followed by deep ray. The author reports three cases. Two patients are living and well, one six years after operation. The third patient died one year after operation.

Plastic Surgery of the Breast.

SIR H. GILLIES AND H. MARINO (*Plast. & Reconstruct. Surg.*, January, 1958) state that a common deformity of the breast among women is the flat discoid ptotic breast resulting from involution after pregnancies or reducing treatment. The subjects are in the 30 to 40 years age group, and while there is no complaint of physical discomfort, on æsthetic and psychological grounds the patient may feel entitled to have the deformity corrected. Selection of patients must be careful to avoid future difficulties, and the patient should be informed of all facts of the repair. These breasts show three outstanding anatomical features: (i) descent of the nipples below the ziphoid line; (ii) lack of fullness, particularly in the upper quadrants; (iii) lack of firmness. The breast volume is often normal or just under normal. The principles in treating the ptotic breast are to separate the gland from the skin covering, to shape it and adapt the skin cover again. Details of the technique are described. The authors consider that plastic correction of the small ptotic breast is justified, and that the "periwinkleshell" operation is the technique to be preferred.

Spontaneous Pneumothorax.

G. E. LINDSKOG AND N. A. HALASZ (*Arch. Surg.*, November, 1957) review 72 cases of spontaneous pneumothorax and discuss the pathogenesis and management of the condition. The fundamental mechanism appears to be rupture of a localized emphysematous vesicle due to an increase in pressure. Valve effects at the junction of alveoli and blebs in the peripheral bronchial tree have been described, most often as post-inflammatory changes. Normally the lung is protected by collateral pathways for the passage of air between adjacent lobules and segments when the direct bronchial route is occluded. In this series the average age was 34 years. The onset was abrupt in most cases and only a small fraction of the patients were known to be in a state of physical activity at the time of onset. Eighteen of the patients gave a history of antecedent pneumonitis, and in 23 there had been previous attacks of pneumothorax. Those with recurrent attacks were generally found to have been treated previously by expectant methods and bed rest. Rapid reduction of the pneumothorax and early expansion of the collapsed lung appear to be the most significant factors in forestalling recurrence. The authors state that reexpansion is most conveniently and certainly effected by the use of small-calibre plastic tubing placed intercostally for constant suction. Exploratory thoracotomy and very conservative resection of the causative lesions is the treatment of choice in persistent and recurrent cases.

Ileo-Entectropy for Ascites.

C. G. NEUMANN, G. C. ADIE AND J. W. HINTON (*Ann. Surg.*, October, 1957) report on the operation of ileo-entectropy to promote the absorption of ascitic fluid in patients with advanced cirrhosis. In this operation the essential step consists of the eversion of a segment of ileum 15 to 18 inches long within the peritoneal cavity, in such a way that the mucosa is bathed by and may absorb ascitic fluid. They have performed this operation on 10 cirrhotic patients with ascites, who before operation had each had a paracentesis performed on from four to 40 occasions, and who were being maintained on a strict regimen, including restriction of dietary salt. The mortality rate was 50%, but all of the deaths occurred in patients exhibiting jaundice or œsophageal varices before operation. The surviving patients have not required therapeutic paracentesis since operation, and have been taking a normal diet without salt restriction.

The Open Method of Skin Grafting.

P. SHERMAN (*Am. J. Surg.*, December, 1957) describes the open method of skin grafting in which no bandages over the grafts are used, so that the process of healing can be seen from the time of application of the graft to its maturity. The author believes that success in free skin grafting depends upon adhesion of the free graft to the body by clot and does not depend upon the continuous pressure of bandaging during the maturing period. Surgically speaking, only two requisites are necessary for the growth of transplanted epidermis, a surgically sterile dry bed to which the epidermis can immediately adhere, and ever-flowing springs of tissue fluid for the nourishment of the epidermis once it is adherent to the body. Biopsy specimens from free grafts after application reveal a clear homogenous fibrin clot beneath the grafts from the third day after application. There is infiltration of the clot with young fibroblasts and capillary endothelium. The infiltration progresses until by the twelfth day there is complete replacement of the clot by fibrous tissue and capillaries. It is the fibrin clot or "body glue" which is the adherent force that firmly pulls the graft to the body. The author states that no outside pressure is necessary at all and all necessary substances for adhesion are normally present on the surface of the skin graft and the wound. Advantages claimed for this method are: (i) The graft is under direct vision at all times, so control is absolute. Foreign-body serum blebs may be detected at once, incised and resealed with prevention of unnecessary tissue loss; (ii) the patient requires very little attention; (iii) operating time is cut to a minimum; (iv) use of material and trained personnel is cut to a minimum; (v) early mobilization of the patient is possible in most cases of grafts above the abdomen; (vi) the method obviates difficult bandaging problems; (vii) the shocking experience to the patient caused by removing extensive bandages is prevented; (viii) lack of heat and moisture helps the wound to dry quickly and prevents infection; (ix) there is little chance for confined infection to destroy graft tissue.

Acute Pancreatitis following Choledochotomy.

J. A. THOMPSON, J. M. HOWARD AND K. D. J. VOWLES (*Surg., Gynec. & Obst.*, December, 1957) record their experiences with pancreatitis developing as a complication of biliary tract surgery and review the cases previously recorded. In 62 out of 66 reported instances operation on the common duct had been performed. Seventeen patients developed the complication following the insertion of a long-arm T-tube of the Cattell type. Undoubtedly the complication occurs in mild forms, but it is usually recognized only in the fulminating form, and the mortality rate in reported cases is 77%. A policy of routine determinations of the serum amylase following choledochotomy will lead to a more frequent recognition of the disease and to earlier institution of therapy. It is suggested that conservative treatment offers a better chance of survival than operative measures. Experience has led many surgeons to the belief that any factor which may produce œdema about the ampulla or obstruct the pancreatic duct should be carefully avoided. The insertion of any mechanical device across the sphincter should be thoughtfully approached, if not avoided. Case histories are presented of four of the authors' patients who died from acute pancreatitis which occurred immediately after choledochotomy.

The Influence of Shock on Renal Function.

M. A. HAYES (*Ann. Surg.*, October, 1957) presents a study of 22 patients who had been in a state of hypotension under anæsthesia during an operative procedure. Only those whose hypotension lasted more than one hour displayed a depression in renal function. He found that the duration of shock was related in a linear fashion to the time required for complete recovery. The greater the initial change in renal function, the longer the time required for return to normal. He states that this study emphasizes the necessity of rapidly correcting hypotension whatever its cause. He also points out the necessity for evaluating renal function after an operation in which the shock occurred, or between staged operations. He states that adequate estimations of renal function for these purposes can be done easily by the concentration test (for tubular function) or the urea clearance test (for glomerulo-tubular function).

The Wider View.

UNRWA HEALTH SERVICES FOR ARAB REFUGEES.

THE following information has been made available by the United Nations Relief and Works Agency for Palestine Refugees, Beyrouth.

One of the most tragic results of the 1948 war in Palestine has been the miserable plight of the several hundred thousand Arabs who then left their homes to take refuge in neighbouring Jordan, Lebanon, Syria and the Gaza Strip. Today the majority of these people still live in the same places where back in 1948 they dropped hungry and destitute awaiting what little relief the local Arab Governments could scrape together to help them.

As the weeks following their exodus stretched into months and the immediate expectation of their early return to their homes was not realized, it became apparent that more organized relief was essential if a major human catastrophe was to be avoided. Already desperate appeals were pouring in to stem what could have developed into serious epidemics of dysentery, typhoid, smallpox, typhus and relapsing fever when UNRPR (United Nations Relief for Palestine Refugees) was set up in 1949 to carry out an organized relief programme with the aid of the International Committee of the Red Cross, the League of the Red Cross Societies and the American Friends Service Committee.

The danger to health was one of the major problems which had to be faced. A whole nation in exile living under primitive conditions in open fields, mosques, caves and rickety tents had to be saved. The small health teams which were organized a decade ago by a World Health Organization specialist to meet the emergency have since developed into an efficient health force serving nearly a million refugees now living in camps, towns and villages scattered over 100,000 square miles in four different countries. UNRWA, the agency which took over relief activities from UNRPR in May, 1950, is now spending at the rate of $5,000,000 per year on its health programme alone.

This substantial health programme is operated by more than 3500 employees, mostly Palestinian Arabs. They include 120 doctors and dentists, over 100 nurses and more than 350 nursing auxiliaries and midwives. More than 1300 persons are employed in the camp sanitation services, and over 1000 on supplementary feeding and milk distribution.

The technical direction of the health programme administered by UNRWA remains the responsibility of WHO.

Preventive Medicine.

The unsatisfactory living conditions of the refugee in an area like the Middle East which is especially open to epidemics have prompted UNRWA to give special emphasis to preventive measures in its over-all health programme.

Under the supervision of a sanitary engineer seconded by WHO, strict sanitation measures are applied in all camps. These include the provision of a clean water supply, an efficient garbage disposal system, and proper sewage arrangements. Flies and other insects which help in spreading disease are combated through regular spraying with a variety of insecticides.

UNRWA has always been aware of the importance of helping the refugees to help themselves. Through its health education programme it tries to teach them good health habits. Health education workers trained by a WHO specialist are now employed in camps teaching refugees the elements of hygiene and how to combat the spread of disease through proper health habits.

Malaria, which through the ages has been a scourge of the Middle East and which took a heavy toll of the refugees who first settled in the Jordan Valley, is now on the way to being eradicated. An antimalaria campaign involving the drainage of swamps and the use of DDT spraying, started by UNRWA four years ago in cooperation with WHO and the host governments, has caused the incidence of this disease to drop from 18·5% of the total number of clinic attendances of sick refugees in East Jordan in 1953 to 0·66% in December, 1957. Today each case of malaria is looked upon a a local source of potential epidemic spread of the disease and receives as much attention as would be given to a case of smallpox.

To protect the refugees from contagious diseases the Agency regularly carries out large-scale preventive inoculation campaigns. Last year 254,000 refugees were inoculated against typhoid, 497,000 against smallpox, 51,000 against diphtheria and 32,000 against whooping-cough.

Supplementary Feeding.

In spite of the inadequate caloric content of the dry rations distributed by UNRWA, there is surprisingly little evidence of malnutrition among the refugees. This is largely due to UNRWA'S supplementary feeding and milk programme, which protects the most vulnerable groups of refugees by giving special dry rations to a monthly average of 27,000 pregnant and nursing women and to non-hospitalized tuberculosis patients, by giving milk to 190,000 children, nursing mothers and sick persons daily, and by serving daily 46,600 supplementary hot midday meals to children and sick persons on doctors' orders.

Menus are specially prepared by a nutritionist and are standardized in all supplementary feeding centres in the four host countries.

Hospitals and Clinics.

For sick refugees UNRWA maintains 92 clinics (in camps, towns and villages), which receive an average of 6,000,000 visits a year, as well as 2000 beds in hospitals which it supports.

Particular attention is given to expectant and nursing mothers who come to special maternal health centres run by the agency for advice and treatment. Last year 100,000 consultations were recorded. As soon as pregnancy is diagnosed a serological test for syphilis is made, and patients with positive findings are treated with antibiotics. Advice on preparation for delivery is given. Future mothers are taught the elements of child care and hygiene, and a simple layette is given to each. A training programme for *dayas*, the traditional local midwives, has been undertaken. After birth, mothers are encouraged to bring their babies for regular checking until the baby reaches the age of two years. As a result, a sharp drop in the infant mortality rate among refugees has been recorded during the past two years.

Continuation of Health Services.

It is mostly due to the strict vigilance of UNRWA'S health services that the refugees and the host countries have been spared from epidemics during the past ten years.

But, as Mr. Henry R. Labouisse, Director of UNRWA, warned the twelfth session of the United Nations General Assembly, "disease would become an immediate threat to the refugees if the Agency were forced to curtail its health services because of the lack of funds". The majority of the Palestinian Arab refugees live in unsatisfactory housing conditions; the rations which UNRWA can afford to give them represent the very minimum needed for subsistence. In these circumstances it is essential for UNRWA to maintain its vigilance over the refugees' health and to continue to receive from governments the contributions to enable it to do so.

Medical Education.

A SECOND MEDICAL SCHOOL IN NEW SOUTH WALES.

THE following is Part 3, "Summary of Recommendations", taken from the report of the Advisory Medical Committee on the Establishment of a Second Medical School in New South Wales. The report was submitted to the N.S.W. Minister for Health, the Honourable W. F. Sheahan, Q.C., LL.B., M.L.A., in May, 1958.

Part 3: Summary of Recommendations.

1. The report of the Advisory Medical Committee advocates a revised system of medical education in the proposed medical school.

2. This system embraces: (*a*) the non-medical University faculties; (b) the medical school of the University; (c) an appropriate number of major teaching hospitals; (d) a group of associated hospitals.

3. Entry into the revised medical course must be preceded by a preparatory university year spent in appropriate

faculties. The Committee strongly recommends that students entering the Faculty of Medicine should be restricted to a number that can be thoroughly trained.

4. The Advisory Medical Committee agrees with the opinion of other committees on medical education set up in this State, in Great Britain and in the United States, namely, that if properly integrated the medical course can be shortened in duration and lightened in content. If certain essential conditions are observed the Committee considers that while maintaining a high standard, the following medical course would afford a proper training for the general practitioner:

Pre-medical: 1 year.

Medical: 4 years, followed by one pre-registration year.

5. Accompanying this revised undergraduate system of education is a flexible and extended provision for post-graduate studies in technical surgery, obstetrics and gynæcology, the various medical specialties and subjects of interest to general practitioners. In this category and under University control is the honours curriculum in medicine, the course of post-graduate training for the degree of Bachelor of Surgery, doctorates by thesis in medicine and surgery, and the direction of post-graduate studies for general practitioners and for students seeking advanced knowledge and qualifications.

6. Consequently, the Committee recommends that provision must be made for the following teaching hospitals:

(a) A University hospital of 200 beds representing the headquarters of the system of medical education and accommodating the Dean of the Faculty of Medicine and the four clinical professors. This hospital should be in close association with the medical school housed within the University grounds.

(b) A further provision of 1500 beds in major teaching hospitals with proper provision of full-time and associated teaching staff, equipment, specialized units, and general out-patients' facilities. These major teaching hospitals should each enjoy equal status within the medical system.

(c) A post-graduate hospital (or hospitals) for technical instruction for advanced graduates studying for higher qualifications or obtaining additional post-graduate experience.

(d) A group of hospitals approved by the University where graduates can be instructed in technical studies. It was considered that many hospitals, both at base rural centres and in the metropolis, would be able to acquire a desirable affiliation with the University as associated hospitals for teaching in those branches of post-graduate medicine and surgery for which they were particularly equipped.

The Committee draws attention to the advisability of the rotation of students among teaching hospitals associated with the University and recommends a close geographical association of the major units.

The Committee lays great emphasis upon the absolute necessity for the proper representation of the University on all its teaching organizations in order that its policy on medical education can be thoroughly implemented.

7. The establishment of the new school will depend upon the date upon which it is decided that undergraduates should be received into the pre-clinical school. If this occurs in the year "Y" it is estimated that the following programme would apply unless special measures are taken to expedite it:

Y–5: Approval of the project and allocation of design funds for the next two years, plus the promise of construction funds when required, i.e., Y–3 to Y.

Y–3: Design of the pre-clinical school completed. (Building £1,250,000, equipment £200,000—£1,450,000.) Design of the University hospital completed. (Building £1,250,000.) Design of the additional facilities required in other University departments completed. (Building £300,000.) Construction commenced on the above three projects.

Y–2: Construction continues.

Y–1: Enrolment of students into the pre-medical year. Appointments of senior teaching staff for the Departments of Anatomy, Physiology and Biochemistry.

Y: Students enter the pre-clinical school.

Y+1: Appointment of the teaching staffs in Medicine, Surgery, Obstetrics and Gynæcology, and Pathology.

Y+2: University hospital completed and major hospitals equipped to receive undergraduates for clinical instruction. The estimated cost of adding teaching and research facilities over and above those services required for the care of the sick in the University hospital and the major teaching hospitals (including subsequently the post-graduate hospital), £1,000,000.

8. The estimated costs (Appendix 2) for the implementation of this programme are as follows:

		£
(a)	Additional facilities in other University departments to provide for the pre-medical year	300,000
(b)	Pre-clinical school .. .. £1,250,000 Equipment (16%) £200,000	1,450,000
(c)	University hospital	1,250,000
(d)	Construction of facilities at the major teaching hospitals for undergraduate and post-graduate teaching and research	1,000,000
	Total:	£4,000,000

9. The Committee recommends that a conference of the parties concerned should be called at an early date to discuss the necessity for creating new teaching hospitals, the affiliation of the teaching hospitals with the respective medical schools, the allocation of medical students to the hospitals and any other related matters. This will ensure that the available facilities will be used in the best interests of medical education in this State.

10. The Committee gave special attention to the consideration of those anomalies in our present system of medical education repeatedly referred to in the Report of the Committee on Australian Universities. It should be pointed out that most of these are not restricted to the Faculty of Medicine, but are widespread throughout University life.

They are: (1) Over-crowding. (2) Inadequate staff and equipment. (3) High failure rates. (4) Weakness of the honours and post-graduate schools. (5) The limitation of medical facilities now available for technical instruction in surgery and other specialties which causes a considerable exodus of our graduates to England for this preliminary training.

The Committee considers that by enabling the University to restrict the number of students entering the Faculty of Medicine to a number for which the staff and facilities would be adequate, the problem of over-crowding will be solved.

The Committee also unanimously endorses the recommendations of the Goodenough Report that the size of student groups should be reduced and should not exceed eight students in the major teaching departments. Further, by shortening the duration and lightening the content of the medical course, by emphasizing those principles in medical education which are basic, and by making the examinations conform to this revised approach to instruction, a high pass rate should be achieved. In this manner much economic, social and educational wastage should be eliminated.

The Committee recognizes the difficulties with regard to reciprocity which at present arise from the shortening of the medical course, but is of the opinion that the advantages of the shorter course outweigh this consideration, particularly as, in view of the world-wide tendency to revise present traditions in medical education, the difficulty may not always remain.

The weakness of the honours and post-graduate schools in Australian Universities is particularly evident in medicine, so that the establishment of a substantial cadre of teachers, investigators and consultants is an urgent necessity. The Committee considered that this could best be achieved by the erection of a University hospital in close association with the medical school which would discharge these special responsibilities.

The Committee believes that it is imperative that a real effort should be made to provide all the necessary facilities for the advanced instruction of medical graduates to obviate the necessity for graduates to seek their higher qualifications abroad. Increased opportunities for post-graduate instruction resulting from the shortening of the under-graduate course will help to make this possible.

The system of medical education here prescribed has been elaborated with the correction of these existing anomalies in view.

Clinico-Pathological Conferences.

A CONFERENCE AT SYDNEY HOSPITAL.

A CLINICO-PATHOLOGICAL CONFERENCE was held at Sydney Hospital on November 19, 1957. DR. E. HIRST, pathologist, was in the chair, and the principal speaker was DR. J. RAFTOS, honorary assistant physician.

Clinical History.

A man, aged 66 years, was first examined at Sydney Hospital four years before his death. At that time he had had an intractable cough for two years, which was usually dry, but periodically productive of copious thick white sputum, and at times distressing, producing tussive syncope. Lately he had had exertional dyspnœa. Post-nasal secretions were troublesome. He had had echinococcal cysts excised from his liver twice, the last occasion being eight years earlier. He did not smoke and took little alcohol, and his weight had been constant at 175 pounds. There was no history of pneumonia, pleurisy or hæmoptysis.

Examination of the patient revealed no abnormality other than a blood pressure of 190/100 millimetres of mercury. X-ray examination of the chest showed no abnormality. The Mantoux response was negative, and the sputum was free from acid-fast bacilli. The blood count was normal and the erythrocyte sedimentation rate five millimetres in one hour. The response to the Casoni test was positive, and the complement-fixation test for hydatid disease produced a negative result (these findings were confirmed when repeated). He was treated with *Mistura Lobeliæ* and *Linctus Morphini* with relief. Eight months later he was admitted to hospital for an attack of "bronchitis", during which he was apyrexial and suffered an attack of asthma. The only abnormalities found were numerous inspiratory rhonchi and wheezing respiration, and on on occasion 10% eosinophils in 8800 leucocytes. The X-ray film showed a little consolidation in the right cardio-phrenic angle, suggesting a recent inflammatory process. An oto-rhino-laryngologist found no abnormality, and after treatment with aminophyllin and penicillin G the patient was discharged from hospital. During the next six months his cough was still persistent and his dyspnœa worse. He was again admitted to hospital with another attack of bronchitis. On this occasion pyrexia was present. The fever subsided after a few days' treatment with penicillin and streptomycin. Ten days after his admission he left hospital, and the X-ray film at that time was clear.

The case was reviewed two years after the first examination. The patient still had a persistent harsh cough with exertional dyspnœa. The relevant findings were a blood pressure of 180/120 millimetres of mercury, a few basal crepitations, and no other abnormality in the respiratory system. The X-ray film showed partial collapse in both lower zones. The radiologist considered the origin of these changes uncertain, and thought that they were consistent with congestion or infection. An electrocardiogram showed premature ventricular contractions and left axis deviation with no definite evidence of myocardial defect. A blood count was normal, and the erythrocyte sedimentation rate was eight millimetres in one hour. The sputum contained no eosinophils. The blood Wassermann reaction was negative.

A year passed, during which there was no significant change, treatment with aminophyllin and potassium iodide being given. An X-ray examination at the end of this year showed that the right lung was normal and that there were "still some changes" in the left lung.

Three months before his death, the patient complained for the first time of chest pain. The pain was centred over the left pectoral region and radiated towards the scapula. It was continuous and knife-like, being unrelated to breathing, exertion or digestion, and was not relieved by rest. There was tenderness in the deep tissue below his left breast. Examination of the skin showed no evidence of herpes.

A month later he was admitted to hospital for the last time. The pectoral pain was now dull and still radiated towards his back. He had exertional dyspnœa and orthopnœa, but the cough and sputum were greatly diminished. Examination now showed diminished movement of the left half of the thorax and tracheal deviation to the right. There were marked dullness to percussion, impairment of vocal resonance, and fremitus with diminished breath sounds on the left side. The X-ray report was "opacity due to pleural effusion extending to the subscapular region along the interlobar fissure". A large amount of fairly heavily blood-stained fluid was aspirated from the left pleural cavity. It contained no acid-fast bacilli. An X-ray film taken after aspiration revealed that there was still considerable fluid, but that the underlying lung was fairly well expanded and that it showed no evident underlying lesion. Biopsy of a supraclavicular lymph node showed no abnormality. At bronchoscopy the right and left bronchi appeared compressed. There was no abnormality of the mucosa. Sacral œdema was now found and treated by digoxin and mersalyl. The electrocardiogram now showed low voltage. The erythrocyte sedimentation rate was 11 millimetres in one hour. Repeated aspirations from the left side of the chest at approximately weekly intervals each yielded about 100 ounces of fluid, blood-stained, brownish or yellow. There was hardly any fever.

Clinical Discussion.

DR. J. RAFTOS: The case under discussion is a very interesting one, in that the patient was observed for a considerable period of time before death and we have an unusually complete series of X-ray films for consideration. I think that ultimately the case resolves itself into the differential diagnosis of hæmorrhagic pleural effusion.

In the introduction to the protocol in this case, it is implied that we are dealing with a continuous process, but in my opinion there are two distinct conditions to be considered. Thus the early part of the prolonged history, with periodic flare-ups, is typical of chronic bronchitis. Then there is a later stage in which the symptoms present over a period of three months appear to be entirely different, with a quite separate train of clinical events. In this later stage there is a severe constant pain in the chest with the subsequent development of a hæmorrhagic pleural effusion—a picture which I think is diagnostic of malignant disease of the pleura, whether it be primary or secondary.

In analysing the history, we are told that the man presented first of all with an intractable cough, which had been present for two or three years before he was first examined. It was productive of a thick white sputum, and at times the cough was so severe that he developed tussive syncope. The symptom was first relieved by *Linctus Morphinæ* and by *Mistura Lobeliæ*, which contains bronchodilator substances. At that time there were no abnormal findings, and the picture I think was quite typical of chronic bronchitis. I do not think that there is anything specially significant about tussive syncope, since it accompanies violent cough and is apt to be present in persons of a certain physique, mainly those with a short neck, and is probably due to cerebral anoxia and probably has the same sort of mechanism as the non-encephalitic convulsions of pertussis. At this stage we have an X ray of the chest which was reported as being clear. However, there is a shadow at both bases and the left diaphragm is a little elevated. I think there could be bronchiectasis or partial atelectasis at both bases.

Eight months after this he had an attack of bronchitis, in which the typical findings of asthma were present; I presume he had some sibilant râles; and at this time he had an eosinophilia. The significance of this is a little obscure; but we know that he had hydatids removed from his liver on two occasions, and the sudden appearance of asthma coupled with an eosinophilia raises the possibility that he may have had an intrabronchial rupture of a hydatid cyst. There is some suggestion that this could have happened when we examine this shadow at the right base, which may represent intrapulmonary inflammation; but it may also represent pleural thickening, and its significance is not clear. The possibility of an intrabronchial rupture of a hydatid cyst merits consideration, but there is nothing in the history that will allow us to make such a diagnosis with confidence. To me the possibility is remote, since the sequence of events is not typical. Usually the onset is more abrupt, the symptoms more severe, and it would be expected that symptoms of pulmonary infection suggestive of a pulmonary abscess would develop. The fact that the lesion seen was not present six months before is against hydatid, since it means that the evolution would have been too rapid.

During the next six months his condition was static except that his dyspnœa appeared to increase. This would be consistent with his bronchitis. There is no suggestion that he had left ventricular failure, and I think that the increase in dyspnœa was due to increased emphysema, though there is nothing in the X-ray or in the clinical examination that will allow us to make a positive diagnosis of emphysema. But so often we make a tentative diagnosis

of emphysema on the basis of symptoms without finding clinical confirmation, and are later able to confirm it on autopsy examination. Shortly afterwards he had a febrile attack of bronchitis, and X ray at this stage, about 17 months after he was first observed, shows two features of some importance. There is some elevation of the diaphragm and some streaking at the left base. These in combination suggest some atelectasis at the left base.

Two years later he presented with similar symptoms of cough and dyspnœa. There was an isolated blood pressure reading showing a diastolic of 120 millimetres, which may be thought to indicate the presence of hypertensive disease. X ray at this stage showed very definite changes at the left base. The diaphragm is again elevated, and there is a dense shadow at the base. Considering the symptoms and this X ray, there is reason to suppose that he has had a further ateletasis—more lung has collapsed—or that he has something more sinister, such as a bronchogenic carcinoma. However, the examination of the subsequent X rays, taken two and six months after, shows that the lesion at the left base is resolving and leaving an area of fibrosis. These changes entirely exclude the possibility of bronchogenic carcinoma as the cause of the X-ray findings at this time.

He continued until three months before his death with cough and dyspnœa, but with no spectacular changes in his clinical condition. At this time he complained of severe pain in the left side of the chest. It was in the left mammary region and radiated to the back. It was consistent and unrelated to exercise or eating, and it was not aggravated by coughing or deep breathing. It seemed to be a difficult pain to relieve. And I think this pain, as I have said before, ushers in a different stage of the illness and that it is due to malignant disease. The question arises as to the origin of the pain. Could it be due to pleurisy? It is not pleuritic in type, in that it does not have any relationship to respiratory movement. I think it is likely that it is due to an infiltration of the intercostal nerves or the chest wall. The other possibility is that there is metastasis in the spine producing radicular pain.

Shortly after this he developed dyspnœa at rest and orthopnœa, and I think that the X ray at this time is diagnostic. It shows that he had a left basal effusion, and in the axillary line there is a shadow, which is ill defined in its lower border, but well defined at its upper border, and it shows clearly a definite edge, and is distinct from the effusion below. It appears to be in the line of the interlobar fissure. On the next day the effusion increased, as did dyspnœa. The story that follows is of the aspiration of large quantities of heavily blood-stained fluid from the left pleural cavity, with rapid reaccumulation. His chest was tapped at weekly intervals, and he ultimately died of this pleural effusion. The shadow in the left axillary region is clearly seen after paracentesis. The next X ray shows reaccumulation of fluid with a shift of the mediastinum. One other point is seen also, that there is widening of the upper mediastinum, typical of metastatic involvement of lymph nodes.

A bronchoscopy was done, the endoscopist reporting that there was compression of both main bronchi, and that there was no mucosal change. If this finding was true, it indicated beyond doubt that the mediastinum was involved by a malignant newgrowth with compression of the bronchi by glands. The further diagnostic measures that were carried out were scalene node biopsy, which was negative, and the examination of the blood, with a negative finding of some value—that the erythrocyte sedimentation rate was only 11 millimetres in one hour.

At this stage, I should like to discuss the various diagnostic measures undertaken routinely in a case such as this. They are (i) bronchoscopy, (ii) examination of sputum, (iii) examination of pleural fluid, (iv) scalene node biopsy, and (v) bronchography. From experience in this hospital, bronchoscopic examination will allow a positive diagnosis in about half of these cases. An extension of the bronchoscopic examination is the examination of sputum or washings for malignant cells. This requires, for routine examinations, a laboratory with trained technicians, and such facilities are not yet available. Examination of the pleural aspirate for malignant cells is often misleading, because the mesothelial cells may resemble those of carcinoma, and false positives are common, although when clumps of cells are found, results are more valuable. I do not think a bronchogram would have provided any useful information in this case, and unless the new contrast medium was used it may have obscured subsequent X rays. Examination of the scalene lymph nodes is particularly useful in bronchogenic carcinoma, since the finding of malignant involvement is not only diagnostic, but is also proof of inoperability. Liver biopsy may be useful in the occasional case, because of the frequency with which bronchogenic carcinoma metastasizes there. Finally, intravenous pyelography probably should be done in such a case in order to exclude hypernephroma.

I have already indicated that I think the disease process is neoplastic. However, one must consider a differential diagnosis, which should include the infectious diseases and also pulmonary embolism, dissecting aneurysm, hydatid, and so on. The picture certainly does not suggest tuberculosis. I have seen a hæmorrhagic pleural effusion only once in tuberculosis, and that represented the termination of a chronic tuberculosis in an acute phase. In this patient, however, from the early films it is easily seen that there is no evidence of tuberculosis. As regards acute infections, the only massive hæmorrhagic effusion I have seen was due to infection with Friedländer's bacillus, and there again the picture was quite different, being that of an overwhelming infection, whereas in this case we have a subacute and steadily progressive process. Pulmonary embolism can be the cause of a massive hæmorrhagic effusion. We have seen a few cases here in which the onset was not the usual abrupt and acute one that is associated with pulmonary embolism, but even so, it was rather more acute than the process we are dealing with here. Dissecting aneurysm should be considered. I would have expected in the case of hæmothorax due to dissection a much more dramatic onset of sudden severe pain and collapse. In the case of hydatid disease there is more difficulty. I think that the largely hæmorrhagic effusion is against the diagnosis of hydatid disease. If we consider the possibility of rupture of a hydatid cyst into the pleura, we should have evidence of hydatid disease in that lung at an earlier stage. Of course, the heart shadow could have obscured such evidence. Moreover, the fluid aspirated should have been more characteristic of the fluid one finds in hydatid cysts.

If we now consider the disease as malignant and seek the primary site, we should think of the œsophagus. However, there was no dysphagia, and although hæmorrhagic fluid may be present in the pleura in carcinoma of the œsophagus, it is usually infected. Hypernephroma could produce a similar picture in two ways. It could extend directly (in the case of the left kidney) through the pleura, or else it could spread by the blood. In the latter case there are discrete lesions in the lung mostly in close proximity to the hilum. Bronchogenic carcinoma must figure prominently in our discussion, especially since this sort of picture is a very common form of termination of bronchogenic carcinoma. Hæmorrhagic pleural effusion with characteristic rapid reaccumulation after aspiration is the form of termination in at least half the cases of bronchogenic carcinoma. However, I think that the X-ray appearances are most unusual and are not typical of it. I find the X-ray picture taken after aspiration of some of the fluid important. It shows that there is no significant degree of pulmonary collapse, and it is most likely that had there been an underlying lung cancer, bronchial obstruction would have caused considerable atelectasis. Of course, there is the possibility that this patient suffered from the more uncommon peripheral form of carcinoma, but on the X ray this is unlikely. It is difficult, if not impossible, to exclude the possibility of lung cancer; but in view of these unusual features I would also like to consider seriously the possibility of a growth of pleural origin. Sarcoma of the parietal pleura is an entity described, but of which I have no experience. It is said to commence in the tissues outside the parietal pleural and to infiltrate the chest wall. It appears to present as masses in the chest wall rather than as pleural disease. The other primary pleural growth is a mesothelioma. It has a tendency to spread over the lung and to produce a thick covering over it. Clinically it is characterized by an early onset of pain, by recurring pleural effusions, usually hæmorrhagic, and often by pulmonary osteoarthropathy which develops early. When resection is possible, the pulmonary osteoarthropathy is rapidly relieved, often within a period of 48 hours by resection of the growth. Metastasis is usually to the mediastinum, as in this patient.

In summary then, the possibilities are bronchogenic carcinoma and mesothelioma of the pleura. I cannot really differentiate between them; but considering that this is a clinico-pathological conference and because of the unusual features of the case, I suggest pleural mesothelioma as the diagnosis.

DR. HIRST: We are fortunate to have present several of our honorary radiologists, Dr. H. G. Marsh, Dr. E. G. H. Manchester and our resident radiologist, Dr. J. A. Lyall.

These gentlemen have had an opportunity to study the X rays, and I will call first on Dr. Lyall.

DR. J. A. LYALL: This first X ray, which was reported as clear, and which Dr. Raftos thought showed pleural thickening or a minor degree of atelectasis, shows in my opinion some shadows at the hilum as well as increased markings at the cardio-phrenic angle. This is also seen in the X ray taken six months later. These findings raise the suspicion of bronchiectasis; but this is a condition which cannot be diagnosed by chest X ray, though the suspicion may be raised. The X rays do not show much change until the shadow at the left base increases, which again may be interpreted as pleural thickening or atelectasis. In addition there is widening of the mediastinum in this later film. In regard to the lesion apparent at the axillary border, I would take that to be fluid in the oblique fissure of the left side, mainly because the shadow continues medially and curves towards the heart shadow. The oblique fissure on the left side rarely continues so far medially, usually extending only about one-third of the distance directly, then taking a curved course separating the upper and lower lobes until it reaches the mediastinum. Since this shadow corresponds to the direction of the oblique fissure, I think that this shadow we see in this patient could very well be fluid in the fissure. However, it may also be thickening of the visceral or parietal pleura. The later X rays show radiological evidence of a large pleural effusion. Where the fluid is partly removed by aspiration there is little evidence of collapse of the lung, but there is now even more prominent widening of the mediastinum. In view of these findings of fluid in, or thickening of, the oblique fissure, the widened mediastinum and the basal effusion increasing greatly to become a massive effusion, my presumptive radiological diagnosis is neoplasm.

DR. E. G. H. MANCHESTER: As for the first part of the interpretation of the radiographs, I agree entirely with the previous speakers; that is, until the appearance of the mysterious shadow at the left base which comes and goes, leaving eventually some linear atelectasis. I think this shadow should be regarded a little more seriously. I disagree with these speakers also in respect of the first critical X ray, which they have identified as showing a shadow in the axillary region. In my opinion there is a significant enlargement of the left hilum in an early X ray. At this stage there is no widening of the mediastinum as seen in the later film, but in this later film the hilar shadow is still prominent. I agree with Dr. Lyall that the shadow in the axillary region is fluid in the oblique fissure, and on the same grounds as he does, and from the fact that it remains unchanged in two subsequent films. It does not seem likely to me that a small neoplasm in that area could loculate itself and not change its appearance in the upper part of the shadow, even though the appearances in the lower part of the shadow changed considerably. I agree that we cannot rule out the pleural neoplasm suggested by Dr. Raftos, but I favour the diagnosis of carcinoma of the bronchus.

DR. H. G. MARSH: It seems that we radiologists are being put through the hoops today. I am largely in agreement with the statements of Dr. Lyall and Dr. Manchester, but I think the first significant changes in the X-ray series occur in the mediastinum. I regard the axillary shadow as possibly due to fluid or to something else, but whatever it is, it is of secondary importance and has followed the pathological process that commenced in the mediastinum. As regards the interpretation of the case as a whole, one could, as Dr. Raftos has done, consider the history as indicating repeated attacks of chronic bronchitis in a patient who later developed a newgrowth. Another possible interpretation is that the whole story is a continuing process centred in the mediastinum. There is a history of recurrent hydatid disease, and a possible interpretation of the radiological features as well as the clinical history is that the patient had a hydatid cyst in the mediastinum.

DR. HIRST: The protocol contains two items of hæmatological interest. There is the eosinophilia and an erythrocyte sedimentation rate of 11 millimetres in one hour. I will ask the hæmatologists, Dr. R. J. Elvy and Dr. R. J. Walsh, to comment on these findings and make any other comments they wish.

DR. R. J. ELVY: Eosinophilia is such a non-specific finding and occurs in a large variety of conditions. It may be present in hydatid disease and has been reported in tuberculosis. An interesting point here is that, in view of the mediastinal change and the secondary lesion, the possibility of a reticulo-endothelial newgrowth such as Hodgkin's disease must be considered. However, the eosinophilia occurred during a phase when he was probably recovering from bronchitis. It is a recognized phenomenon that an eosinophilia occurs during the recovery phase of many infections, and this is a possible explanation of such a finding in this case. It is probably a good indication of response to therapy. The erythrocyte sedimentation rate is again a non-specific finding. It is probable that at the time of the measurement he was an ill man, and that little significance can be attached to it regarding the problem of diagnosis. I think that the widening of the mediastinal shadow could be due to Hodgkin's disease.

DR. R. J. WALSH: I agree with Dr. Elvy that the eosinophilia is of very little help in the diagnosis and is probably a non-specific type of change. As far as the erythrocyte sedimentation rate is concerned, it is quite obvious that those looking after the patient were in some doubt regarding this finding. I think it is important, when stating the sedimentation rate, to say how it was performed. In this case probably they were thinking in terms of tuberculosis. This sedimentation rate could be within normal limits, but it could also be raised. As regards the diagnosis, I feel that most possibilities have been mentioned.

DR. HIRST: The erythrocyte sedimentation rate was measured, as is usual in this hospital, by the Westergren method. Dr. Revai, during the course of this patient's illness he was examined by an endoscopist who reported compression of the bronchi. Would you care to comment on that finding?

DR. A. REVAI: There is little to say about it, other than that the lesion compressing the bronchi must have been large. I would be inclined to think that such compression of both bronchi would be more likely to result from Hodgkin's disease or perhaps lymphosarcoma or some lesion residing in the lymph nodes than bronchogenic carcinoma.

DR. HIRST: I will now call on the physicians for comments.

DR. D. HANDLEY: Most of the points which have been made in this case lead me to the opinion that it is very suggestive of Hodgkin's disease. There is fluid in the oblique fissure and there is also widening of the mediastinum. Yet there was no growth seen in the bronchus. To my mind that is against bronchogenic carcinoma, unless it was one of the peripheral ones. The narrowing of the bronchi must have been due to extrinsic pressure, probably Hodgkin's disease in lymph nodes. There are, however, several points against Hodgkin's disease. For example, there is the absence of the pyrexia, the absence of a raised erythrocyte sedimentation rate, the absence of anæmia, and the fact that he had not lost weight. This is unusual in any type of malignancy, but I still think that the most likely diagnosis is Hodgkin's disease.

DR. B. J. PASCOE: I agree with Dr. Handley that the absence of weight loss is significant. If the history commenced some four years ago and no weight loss had occurred, I think it is unlikely that there was any neoplasm. Moreover, the normal erythrocyte sedimentation rate, though not conclusive, does tend to support this supposition. However, I do not feel that I can offer any alternative diagnosis.

DR. B. LAKE: I am puzzled by the mediastinal enlargement, and I think it would be consistent with the diagnosis of dissecting aneurysm. While not wishing to develop the argument at length, I think that all the features of the case are consistent with a cardiac story and propose that the diagnosis is dissecting aneurysm.

DR. B. HURT: I think that there is no doubt that this patient had a chronic bronchitis with probably bronchiectasis. On a statistical basis I believe we will find that the answer will be that he had a bronchogenic carcinoma. There is some evidence that in pulmonary scarring following chronic pulmonary inflammatory conditions there is a statistically greater risk that the patient may develop a pulmonary neoplasm at this site. I have been interested in the erythrocyte sedimentation rate for some time, and I think that the value of a routine erythrocyte sedimentation rate and white cell count on every case that comes to the pulmonary clinic may be over-estimated. Admittedly an abnormality may be found—for example, a raised eosinophil count—but the interpretation is often doubtful and often non-specific. The sedimentation rate I have found of very little help in the diagnosis of bronchogenic carcinoma. It has been widely held that bronchogenic carcinoma is almost always accompanied by a raised erythrocyte sedimentation rate, but we have been able to show on many occasions that this is not always so. Therefore, to me, the finding of an erythrocyte sedimentation rate within normal limits does not exclude a highly malignant process. The hæmorrhagic

pleural effusion strongly suggests bronchogenic carcinoma as a first thought. It struck me as unusual that the patient had not lost general condition. However, this does not deter me from proposing that the most likely diagnosis is bronchogenic carcinoma superimposed on chronic inflammation with pleural spread and hæmorrhagic effusion prior to death.

DR. R. LEWIS: I would like to mention three conditions which have already been mentioned. First, there is mesothelioma of the pleura, of which I have had experience of only one case. In this instance the mediastinum was deviated towards the side of the lesion, the tumour having caused considerable adhesion before fluid commenced to accumulate. The other two conditions have also been mentioned. They are Hodgkin's disease and lymphosarcoma. I feel, as other speakers do, that if this was Hodgkin's disease, the absence of fever is very unusual. This leaves lymphosarcoma. While I admit that hæmorrhagic pleural effusion is more frequently associated with bronchogenic carcinoma, I think that lymphosarcoma is a definite possibility.

DR. T. REEVE: I must admit that seeing the X-ray films has altered my previous concept of this patient and has led me to abandon my first thought of dissecting aneurysm. The inescapable fact is that the patient had widening of the mediastinum, as shown in the film, and I think now the probable diagnosis is malignant disease, probably bronchogenic carcinoma, though I would like to see the lateral film.

DR. LAKE: I would like to ask about the mechanism of the chest pain, especially the radiation to the scapula. Is this a type of mediastinal pain, and if so, what is the mechanism of it?

DR. HIRST: I think Dr. Raftos has already given his opinion on the probable source of the pain in this case, but he may care to make a further comment and perhaps answer some of the speakers.

DR. RAFTOS: I have mentioned the possible sources of pain in this patient. There may be direct infiltration of the chest wall and involvement of the intercostal nerves by newgrowth. There is also the possibility of spinal metastases affecting the nerve roots. Whether pain could also be due to actual distension of the mediastinum I do not know. In regard to the erythrocyte sedimentation rate, I disagree in some points with Dr. Hurt. We analysed a series of 100 cases of bronchogenic carcinoma, and the erythrocyte sedimentation rate was below 35 millimetres in one hour by the method used in this hospital in only three cases. These three were all cases of peripheral carcinoma. All central cancers had a raised erythrocyte sedimentation rate, and it was interesting to see how many of them had a very considerable elevation of the erythrocyte sedimentation rate. At least half of them had an erythrocyte sedimentation rate in excess of 50 millimetres in one hour. There is another feature of this case which to me militates against the diagnosis of bronchogenic carcinoma in this patient. Almost invariably, in the terminal stages of bronchial carcinoma, cough is a prominent and often distressing symptom, and hæmoptysis is often present. There is infected sputum. In this case we have none of these features. There is nothing to suggest that the neoplasm communicated with a bronchus. I think that Hodgkin's disease and lymphosarcoma are unlikely and could not account for the X-ray appearance.

Pathological Report.

DR. HIRST: The patient had been a well-nourished man of more youthful appearance than the stated age. There was no evidence of recent weight loss. There was no cyanosis or clubbing and no evidence of Horner's syndrome. There was an old right paramedian scar, being the site of previous operations for echinococcal disease. The thorax was large and asymmetrical, the left side being larger than the right. The trachea was deviated to the right.

The right pleural cavity contained three ounces of clear brown fluid, and there was an area of fibrous parietal pleural thickening approximately six centimetres in maximum extent. What was presumably the left pleural cavity contained 1800 cubic centimetres of dark-brown fluid, and a large quantity of thick spongy fibrin in which more fluid was enmeshed. When the fluid was removed, the resulting cavity was found to be completely lined by more fibrin and by a thick layer of firm, pinkish-yellow tissue about four centimetres in maximum thickness. In places this tissue projected into the pleural cavity in the form of nodules. The growth infiltrated the chest wall with extension into the intercostal muscles and into parts of the left fifth and sixth ribs. Similar tissue was present on the external surface of the parietal pericardium and on the pleural surface of the left side of the diaphragm.

The right lung was normal. Compression of the right main bronchus could not be confirmed at autopsy, and no residual abnormality was found such as had been indicated by the radiological appearances in the early films. Presumably whatever lesion had existed here had entirely healed.

The left lung was very small and extremely collapsed. It was found lying at the upper and posterior part of the pleural cavity, and it was encased in a thick layer of pinkish-yellow tissue and fibrin similar to that of the parietal pleura. The cut surface of the left lung showed a rind of this newgrowth varying in thickness, with a maximum of three centimetres. The demarcation between this tissue and the underlying lung was sharp, but irregular. The hilar and mediastinal lymph nodes were notably enlarged, and their cut surfaces showed friable white tissue. These enlarged lymph nodes compressed the left main bronchus. Careful examination of the bronchial tree failed to reveal newgrowth in it.

There was a pericardial effusion of clear brown fluid measuring 60 cubic centimetres. The left side of the pericardium was greatly thickened by a layer of the pinkish-yellow tissue described above, but the inner surface of the parietal pericardium and the heart were normal.

Within the peritoneal cavity we found numerous adhesions, a contracted, partly calcified scar and two small hydatid cysts. The latter measured 2·5 centimetres in diameter and were situated respectively on the peritoneal surface of the left diaphragm and on the serous surface of the descending colon. Each contained plicated membrane and little fluid.

The only evidence of malignancy in the abdomen was an enlarged lymph node near the spleen situated on the greater curvature of the stomach and showing friable white tissue on its cut surface. The stomach and other viscera were notably free from newgrowth. There was fatty infiltration of the pancreas, dividing the organ into discrete lobules of normal glandular pattern. The prostate showed mild glandular nodular hyperplasia. The remainder of the organs were normal. Microscopically the growth was composed of large cells with abundant cytoplasm and eccentric nuclei often double, rarely multiple. This picture, except for an area of more fibrous appearance near the lung, was uniform throughout the sections. The cells bore a superficial resemblance to signet ring cells, but were mucicarmine-negative. The more fibrous areas resemble the pattern and cellular component of a fibrous pleural mesothelioma.

Sections of the lung showed mainly collapse, and sections of the bronchial mucosa even in areas quite near the newgrowth showed only chronic inflammation.

The sections of the mediastinal and the perigastric lymph nodes showed metastatic newgrowth similar to that of the pleural growth. Microscopic examination confirmed the peritoneal cysts as echinococcal in origin, and showing evidence of degeneration.

It is our opinion that the growth is a diffuse malignant mesothelioma, taking into account the absence of any primary newgrowth in any of the other organs including the prostate, testes, pancreas, adrenals, alimentary tract and thyroid gland.

Diagnosis.

(i) Malignant pleural mesothelioma with metastases to mediastinal and perigastric lymph nodes. (ii) Partly degenerated echinococcal peritoneal cysts.

Hospitals.

RANDWICK CHEST HOSPITAL.

IN a short notice published recently (M. J. AUSTRALIA, June 7, 1958, page 804) it was advised that the Minister for Health in N.S.W. had given approval to the new name of Randwick Chest Hospital for the institution formerly known as the Randwick Auxiliary Hospital. There can be little regret at the superseding of a title which for the greater part of the hospital's existence has been an inaccurate relic of past history. Perhaps, because of this, there has been much confusion among the profession at large as to the function and administration of the hosptal. The following story should therefore be of interest.

At the turn of the century a large stone building in Avoca Street, Randwick, housed the Paddington Boys' Orphan Asylum. During the first World War this building became the administrative centre of the main military hospital of N.S.W., and hutted wards were built, extending southwards down the hill towards the racing stables and open paddocks of Randwick and Kensington.

Subsequently, for 20 years this, the Prince of Wales Hospital, served as the medical headquarters of the Repatriation Commission. As wartime demands subsided, the southern-most wards were closed, and eventually they were handed over to the Coast Hospital, then part of the State hospital system (i.e., it was administered by the Department of Public Health), as a convalescent annexe. Nurses and resident medical officers from the parent hospital were seconded for duty in the Auxiliary Hospital, as it was named, and in due course its function was limited to the care of the tuberculous.

In 1935-1936 came the separation of the Coast Hospital from the department, and its reorganization under a board of directors as the Prince Henry Hospital. The tuberculosis annexe remained under the ægis of the department as a separate State hospital, but retained the name. At first, its 90 beds accommodated mainly the moribund—those with better prognosis were transferred to the Waterfall Sanatorium. A series of part-time medical officers at that time included Dr. Hales Wilson and Dr. Stuart Marshall. Finally, after four years of part-time service, Dr. W. Bruce Fry was appointed Medical Superintendent (1941), and has occupied that position to the present. Despite the stringencies of the times, with resultant difficulty in recruiting trained and domestic staff, and that bugbear of all hospitals, chronic shortage of funds, facilities gradually were expanded to provide all forms of treatment then in vogue. The thoracic surgical work for most of this period was in the hands of Mr. M. P. Susman. The hospital has always treated patients with extrapulmonary tuberculosis, as well as those with the pulmonary form, and dealt with general surgical problems in the tuberculous, who in the past have found difficulty in gaining admission to public hospitals.

The available accommodation was enlarged considerably after the introduction of the Commonwealth-States agreement, and reached a maximum of 300 beds in January, 1954. Since 1956, a full-scale surgical unit, capable of dealing with all intrathoracic problems, has been in operation. In this, the capacity to handle its own surgery, the hospital is unique among the departmental chest institutions of the Commonwealth. The hospital has not been idle in the field of nursing education, and has now developed a twelve months' course, leading to a Certificate in Tuberculosis Nursing, comparable with the well-recognized certificate issued by the British Tuberculosis Association.

It would appear that tuberculosis will present a problem for years to come, and the hospital, by reason of its departmental status, will continue to play an important role. It remains to be seen whether or not, as pressure on beds for patients with tuberculosis declines, an ancillary function may be found in caring for other chronic and disabling respiratory disease. However, whatever the future may hold, the Randwick Chest Hospital, with its permanent medical staff, aided by an able team of visiting specialists with teaching hospital affiliations, stands ready to repeat its record of 20 years' service to the tuberculous and chronically ill of N.S.W.

Out of the Past.

In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.

INSANITY IN RECENT IMMIGRANTS.[1]

[From the *Australasian Medical Gazette*, September, 1891.]

DR. F. N. MANNING deems it necessary once more to invite attention to the number of patients admitted to Institutions for the Insane within a few months after their arrival in the colony. During the year 1890 thirty-six persons were admitted to the hospitals at Callan Park and Gladesville who had not been six months resident in New South Wales: and of these, thirteen—nine at Callan Park and four at Gladesville—were sent to hospital direct from the ship in which they were brought to the Colony or immediately afterwards. The majority of these persons were without means and their cost at once fell on the State. Dr. Manning states that whilst Victoria, South Australia, Tasmania, Queensland and New Zealand have all acts forbidding the importation of insane and otherwise helpless and dependent persons, there is no statute of the kind in this Colony—a fact of which the captains and agents of ships are well aware. Not only are insane persons who are booked for this Colony landed here, but also those booked for other Colonies and for whose maintenance the captains or agents would become responsible if they landed them therein.

[1] From the original in the Mitchell Library, Sydney.

Correspondence.

CHLORPROMAZINE JAUNDICE.

SIR: I read with interest the article "Resolution of Chlorpromazine Jaundice without Withdrawal of the Drug" by W. H. Trethowan and J. W. Shand (M. J. AUSTRALIA, April 26, 1958). I have had personal experience of two deaths due to chlorpromazine jaundice. Even though this case terminated successfully, in view of the fact that both manic and depressive states respond successfully to ECT treatment, I feel that an unjustifiable risk was run in continuing the drug while the patient was jaundiced.

Yours, etc.,

Central Islip State Hospital, New York, U.S.A.
June 6, 1958.

M. G. JACOBY, M.B., B.S.

HYPNOTIC ANÆSTHESIA.

SIR: In view of the recent publicity in the lay Press in regard to hypnotic anæsthesia, the following case may be of interest.

Mr. A., a Greek, aged 34, had a fall two years ago and suffered a ? ruptured supraspinatus tendon and avulsion of a chip off the humerus. He has been incapacitated since then. Under deep hypnosis he still complained of marked tenderness over the greater tuberosity. On May 28, 1958, using hypnosis, the tuberosity was exposed revealing an elevated roughened area. A piece of bone 1·0 × 0·75 × 0·5 centimetre was chiselled off and the area smoothed with a rasp. The patient was given a post-hypnotic suggestion of anæsthesia to last one week. This also was completely successful.

In regard to these hypnotic anæsthesias, it should be noted that James Esdaile (1808-1859), a Scot working in India, reported 300 cases of major surgery, including 19 amputations, performed under hypnosis. When one remembers that Morton first used ether as an anæsthetic for a surgical procedure in 1844, one realizes that hypnotic anæsthesia is by no means an achievement of this atomic age.

Yours, etc.,

Swift Street, Wellington, New South Wales.
June 9, 1958.

J. M. MARTIN.

CORRIGENDA.

SIR: On reading THE MEDICAL JOURNAL OF AUSTRALIA of June 7, 1958, I found two possible typographical errors, but more probably errors of omission or proper explanation on my part. Consequently I would be grateful if you would publish the following corrections for me.

(a) On page 788, under "Section of Dermatology and Section of Ophthalmology", paragraph 2, line 10, is stated "the lesions rarely arose from the basal-cell layer of the epidermis". This should read "the lesions rarely arose directly from the basal-cell layer of the epidermis", since the cells from which rodent carcinomas commonly arise,

such as those of the hair follicles, originally arise from the basal-cell layer of the epidermis.

(*b*) On page 789, in paragraph 3, lines 10 to 14, is the following statement: "In that way a considerably smaller dose of X rays could be applied to the base of the lesion and the surrounding tissues than would be necessary if the tumour mass was present during irradiation." The words "to the base of the lesion" should be omitted, since the base of the lesion, if present, requires the same dose of irradiation at all times, if irradiation only is employed. It is the surrounding tissue which requires less irradiation following physical destruction of the tumour mass, and thus regeneration is less impeded.

Yours, etc.,

143 Macquarie Street, J. C. BELISARIO.
Sydney,
June 17, 1958.

PURGATIVES AND CANCER.

SIR: The anthracene group of purgatives should not be habitually used for one of the commonest present-day complaints, i.e., chronic constipation. These drugs include cascara, senna, aloes, aloin and rhubarb, and are present in many popular proprietary preparations. They contain emodin and chrysophanic acid, which are anthraquinone derivatives and supposedly inactive in the gastro-intestinal tract. Similarly other members of the drastic series of purgatives contain supposedly inactive glycosides. Examples are jalap, colocynth and podophyllum. All these drugs, including phenolphthalein—a dye substance, taken to produce peristalsis—act by chronic irritation of the mucosa.

My latest patient, 20 years ago, suddenly decided to take an overnight infusion of four senna pods regularly. She took 7300 doses, and now at the age of 73 is dying of an inoperable cancer of the colon. Her husband has taken a similar dose, but has as yet no symptoms. An American research worker recently proved that a known carcinogen, 20-methyl cholanthrene, fed to mice for an average time of one year, which is equivalent to twenty years in an adult male, produced a big proportion of gastro-intestinal carcinomata.[1] Salines and bulk-forming laxatives are preferable treatment for constant use as a counter to an increasing amount of chronic constipation in an aging population such as ours.

Yours, etc.,

"Kingslynn", R. T. DAVIES.
280 Williams Road,
Toorak,
Victoria.
June 17, 1958.

AN UNUSUAL DERMATITIS.

SIR: I feel it may be of some interest to practitioners in mining areas to be appraised of the following condition. Recently the Division of Industrial Medicine, in cooperation with Mr. Brimblecombe, an entomologist of the Department of Agriculture and Stock, investigated an unusual outbreak of dermatitis in coal mines situated in the Ipswich area of Queensland. The story was that quite a considerable number of men were attacked by a condition diagnosed as either hives, nervous allergy, or neurodermatitis. Investigation showed that the rash only appeared when the men were down the mine, and the description of it was one of an urticarial nature. During the investigation underground members of the party, who eliberately exposed themselves, developed an urticarial rash which exhibited all the features of urticarial weals. The areas of subcuticular œdema were quite marked and itched considerably. The inference was that they were the result of a bite by a small insect. One of the typical features is that all men attacked complained of a mild burning sensation which is characteristic.

These features are typical of a dermatitis caused by the itch mite *Pyemotes ventricosus* Newport, family Pyemotidæ. This mite is known to be predatory on wood borers and wood borers are known to attack mine props. Consequently, in the entomological part of the examination, attention was concentrated on boring insects associated with the mine props and parasites and predators attacking them. Many specimens of borers and other insects were caught and trapped and specimens of mine props were taken for examination. Mr. Brimblecombe was able to definitely identify *Pyemotes ventricosus* in large numbers and the cause of the urticarial rash was established.

The condition is not a serious one, but likely to be puzzling to both miners and practitioners who may be consulted. Preventive measures consist obviously in selection of borer-resistant timbers in the first place, and the application of repellent to men would be of little practical use in view of the heavy work undertaken. Most workers attain a rapid immunity to the bites in a similar way to that occurring with mosquito and sandfly bites.

Yours, etc.,

E. M. RATHUS,
A. R. BRIMBLECOMBE.
Division of Industrial Medicine,
Department of Health and Home Affairs,
William Street,
Brisbane.
May 15, 1958.

MEDICAL ETHICS AND INSURANCE REPORTS.

SIR: As "medical ethics" has been the subject of a recent report, it has seemed to me timely to draw attention now to what appears to be a much too common ethical fault. Thus when one practitioner sends to another, e.g., a specialist, a patient for an opinion in an insurance case, it is still correct ethics to send the original report on this case to the referring doctor and the copy to the insurance company. To those who reverse that procedure I would say, "Bow not to Mammon", or at least be brave enough to be courteous to your colleagues. Further than that, a little consideration will suggest that when an insurance case comes direct to a specialist, there are at least a number of occasions (if we are to pay more than lip service to "doctor patient" relationship) when the original report should be sent to the patient and the copy to the insurance company. Lastly, I wonder if it could not be considered an ethical breach (let alone a libel risk) to advise an insurance company, say, "This man is a malingerer", without supplying at least a copy to the patient. Is there anything in the Act which says an insurance company is entitled to a confidential or secret report on an insured worker?

Yours, etc.,

"Harley", C. C. MCKELLAR.
143 Macquarie Street,
Sydney.
June 11, 1958.

PRURITUS ANI.

SIR: In the interesting paper on pruritus ani by Dr. Edward Wilson and the subsequent discussion (M. J. AUSTRALIA, April 26, 1958) there was no mention of the important work of Dr. Ida Macalpine[1] on this topic. As psychiatrist to the dermatology department of St. Bartholomew's Hospital, she has had uniquely extensive psychiatric experience with cases of pruritus ani for which no organic cause can be found.

In her series, she observed[2] that although patients presented monosymptomatically, the pruritus never occurred alone. It was always accompanied by "gastro-intestinal complaints, such as indigestion, odd pains in the abdomen, constipation, feelings of fullness, flatulence, hæmorrhoids, a feeling of incomplete emptying at stool and of the anal canal being too narrow and fissuring. Associated disturbances were also present in relation to sexual function, commonly frigidity and vaginism in females and premature ejaculation or impotence in males."

Concerning the psychopathology of the disorder, Macalpine shares Dr. Wilson's scepticism as to the supposed masturbatory nature of the scratching. As Rothman[3] has pointed out, the pain produced by scratching is a means of stopping the itching, explained physiologically by the fact that itching stops when pain supervenes. Similarly, she points out that veiled homosexuality can have nothing to do with

[1] Stewart, H. L., and Lorenz, E. (1949), *J. Nat. Cancer Inst.*, 10:147; quoted in Homburger, F., and Fishman, W. H., "The Physiopathology of Cancer", 1954 Edition.

[1] Macalpine, Ida (1953), *Psychosom. Med.*, 15:499.

[2] Macalpine, Ida (1954), "Critical Evaluation of Psychosomatic Medicine in Relation to Dermatology", in "Modern Trends in Dermatology", Second Series, edited by MacKenna, R. M. B., London.

[3] Rothman, S. (1941), *Physiol. Rev.*, 21:357.

it, if only because this would not account for pruritus ani in women: female homosexuals have no particular interest in the anal region. While Macalpine's papers must be read for an appreciation of her views, in brief, she considers psychogenic pruritus ani to be "a hypochondriacal syndrome, accompanied by concern and preoccupation with body function; it can shade into schizophrenia, but often occurs in the absence of other psychiatric abnormality. It should be clearly differentiated from anxiety hysteria or neurosis". In psychotherapy it can often be traced to unconscious fantasies concerned with the interior and functioning of the body, the symptoms constituting a somatic expression of these fantasies.

Experience with such patients supports Macalpine's statement that "the syndrome is capable of reduction by psychotherapy. Strangely enough, duration and severity do not influence accessibility to psychotherapy adversely: patients with incapacitating symptoms for 15 years can be so much improved as to be almost symptom-free in 20-30 sessions. The presence of pronounced paranoid trends tends to worsen the prognosis, whereas depressive features are on the whole favourable". Sometimes symptoms disappear in as little as six to eight sessions, though further sessions are desirable to consolidate this gain.

Yours, etc.,

H. PHILLIP GREENBERG.

London, W.1,
June 19, 1958.

THE LAMBIE-DEW ORATION.

SIR: The year 1956 marked the retirement of the first full-time professors of medicine and surgery in the University of Sydney, Professor C. G. Lambie and Professor Sir Harold Dew. Their association with the Medical Faculty of the University of Sydney extended over many years, and theirs was a major role in the training of students. Accordingly, the Council of the Sydney University Medical Society has instituted an annual Lambie-Dew Oration to be given each year by a speaker of note. By courtesy of the Post-Graduate Committee in Medicine, Professor M. M. Wintrobe, Professor and Head, Department of Medicine in the University of Utah, has consented to deliver the Inaugural Oration in the Great Hall of the University on Wednesday, July 16, at 8 p.m. His subject will be "Medical Research and Medical Practice". Dress will be informal. All members of the profession are invited to attend.

Yours, etc.,

ANN JERVIE,
Vice-President, Sydney University Medical Society.

New Medical School,
University of Sydney,
June 23, 1958.

The Royal Australasian College of Physicians.

ADMISSION OF FELLOWS AND MEMBERS.

AT a meeting of the general body of Fellows of The Royal Australasian College of Physicians held in Sydney on June 4, 1958, the following were elected and admitted to fellowship of the College. Under Article 44: Surgeon Rear-Admiral Lionel Lockwood, of Victoria, Professor J. A. R. Miles, of New Zealand, and Professor J. S. Robertson, of South Australia. Under Article 42: Dr. R. A. Bakewell, Dr. J. D. Bergin, Dr. R. C. S. Dick, Dr. W. G. Gray, Dr. G. P. Hallwright, Dr. J. A. Keeling, Dr. L. S. A. Lewis, Dr. R. W. Medlicott and Dr. C. P. Powles, of New Zealand; Dr. R. B. Blacket, Dr. Clair Isbister, Dr. A. G. McManis, Dr. R. D. Puflett, Dr. D. S. Stuckey and Dr. Helen M. Taylor, of New South Wales; Dr. Joseph Bornstein and Dr. H. N. B. Wettenhall, of Victoria; Dr. J. V. Gordon and Dr. B. S. Hetzel, of South Australia; Dr. G. B. V. Murphy and Dr. N. V. Youngman, of Queensland.

The following candidates, who were successful at an examination held in New Zealand, were admitted to membership of the College on June 3, 1958: Dr. R. J. Cantwell, Dr. T. P. Casey, Dr. R. J. M. Coates, Dr. C. O. Crawford, Dr. P. M. Dennis, Dr. F. E. Dreifuss, Dr. J. D. Frankish, Dr. Colleen A. Hall, Dr. E. E. Hannah, Dr. H. J. H. Hiddlestone, Dr. R. O. H. Irvine, Dr. Malcolm Watt.

The following candidates, who were successful at an examination held in Australia, were admitted to membership of the College on June 3, 1958: Dr. L. Bernstein, Dr. R. W. Boden, Dr. G. M. Bourke, Dr. B. S. Clifton, Dr. H. Kronenberg, Dr. L. Lazarus, Dr. M. A. Mishkel, Dr. J. G. Opie, Dr. W. K. A. Paver, Dr. June M. Raine, Dr. F. L. Ritchie, Dr. W. A. Seldon, Dr. N. A. Talley and Dr. W. H. Wolfenden, of New South Wales; Dr. R. R. Andrew, Dr. P. F. Bladin, Dr. D. M. Danks, Dr. A. P. Dorevitch, Dr. J. A. Game, Dr. G. S. Hale, Dr. A. D. McCutcheon, Dr. F. I. R. Martin and Dr. S. Shub, of Victoria; Dr. T. H. Beare, Dr. J. R. Lawrence and Dr. R. H. C. Rischbieth, of South Australia; Dr. J. M. Sutherland, of Queensland; Dr. B. C. Bignold, of Western Australia. Dr. M. C. Fowler, of South Australia, and Dr. R. D. K. Reye, of New South Wales, were admitted to membership under the provisions of Article 37.

EXAMINATION FOR MEMBERSHIP.

THE next examination for membership of The Royal Australasian College of Physicians will be held on the following dates:

Written examination (capital cities): Friday, August 29, 1958.

Clinical examination (Melbourne): Commencing on or about Monday, October 6, 1958.

Application forms may be obtained from the Honorary Secretary, 145 Macquarie Street, Sydney, and applications should be lodged with the Honorary Secretary not later than Friday, July 25, 1958.

Royal Australasian College of Surgeons.

FACULTY OF ANÆSTHETISTS.

Final Examination for the F.F.A.R.A.C.S.

A MEETING of the Court of Examiners for the final examination for Fellowship of the Faculty of Anæsthetists of the Royal Australasian College of Surgeons will be held in Melbourne beginning on Friday, October 17, 1958. Candidates who desire to present themselves at this examination should apply, on the prescribed form, to the Assessor for permission to do so before September 4, 1958. The appropriate forms are available from the Secretary of the faculty, Royal Australasian College of Surgeons, Spring Street, Melbourne, C.1. It is emphasized that entries close on September 4, 1958, and that late entries cannot be accepted. The examination fee is £26 5s. *plus* exchange on cheques drawn on banks outside Melbourne, and must be paid to the Secretary by September 4, 1958.

The subjects for the final examination are: (*a*) anæsthesia and analgesia, including pre-operative and post-operative care; (*b*) medicine and surgery; (*c*) the application of the basic sciences, including chemistry and physics, to the specialty of anæsthetics. The examination in each case is partly written, partly oral and partly clinical (including the examination of patients).

Graduates of an approved medical school who have obtained, prior to December 31, 1957, the first part of the diploma in anæsthetics of an approved medical school or college, may, at the discretion of the Board, be allowed to proceed to the final examination of the Faculty provided they have fulfilled all other regulations.

The College of Radiologists of Australasia.

THE THOMAS BAKER MEMORIAL FELLOWSHIP FOR RADIOLOGISTS.

THE Council of the College of Radiologists of Australasia has been empowered by the trustees of the Thomas Baker (Kodak), Alice Baker and Eleanor Shaw Benefactions to select a Fellow for a period of study abroad. The purpose of the Fellowship is to allow a qualified radiologist to

further his knowledge by study in the United Kingdom. It is not intended that the Fellow should obtain further academic qualifications during the tenure of the Fellowship; but he may arrange to stay overseas for a further period for this purpose. The conditions are as follows:

1. The Fellow shall be a British subject, a graduate of a university in Australia or New Zealand, and should hold the Diploma of the College of Radiologists of Australasia or a recognized radiological diploma, and the possession of a higher medical degree will be an advantage.

2. The Fellowship may be awarded in either of two categories:

(*a*) A qualified radiologist, preferably of one or two years' standing. The tenure of the Fellowship shall be from twelve to eighteen months. The value of the Fellowship is £2000 (Australian).

(*b*) A radiologist who has already attained junior consultant status. The duration of appointment may be from six to eighteen months. The Fellowship would be at least £1000, but may be of the full amount available, depending upon the length of time spent overseas. The candidate would be expected to state his intention in regard to the duration of his stay abroad when making his application.

Candidates shall indicate, when making their application, in which category they wish to be considered.

3. Preference will be given to applications made under category (*a*).

4. The Fellow must be prepared to take up the Fellowship and leave for overseas by July 1 of the following year after his election. He shall also give an undertaking that within two years of assuming the Fellowship he will return and engage in the practice of radiology in Australia or New Zealand for at least two years.

5. He shall furnish a report to the Council on his return.

6. The Fellow may elect to further his studies in either radiodiagnosis or radiotherapy.

Application forms may be obtained from the Honorary Secretary, The College of Radiologists of Australasia, British Medical Association House, 135 Macquarie Street, Sydney, and must be lodged with him by the last day of September, 1958.

The Royal College of Obstetricians and Gynaecologists.

THE FOTHERINGHAM RESEARCH FELLOWSHIP, 1958-1959.

MRS. M. H. FOTHERINGHAM has given £10,000 to the Australian Regional Council of the Royal College of Obstetricians and Gynæcologists. The interest from this sum is to be used to sponsor clinical research in Australia. The Australian Regional Council has decided that a fellowship should be offered to all suitable candidates within the Commonwealth of Australia for the year 1958-1959 and in subsequent years. Applications for the fellowship should be forwarded to the Honorary Secretary of the Australian Regional Council, 8 Latrobe Street, Melbourne, Victoria. The following information describes the terms governing the awards of this fellowship. Further details can be obtained from the Honorary Secretary.

1. The object of this fellowship is to stimulate clinical research and investigation amongst registrars and junior honorary medical officers in the obstetrical and gynæcological wards.

2. The fellowship is to consist of a grant-in-aid of £500.

3. It is to be awarded on a part-time basis.

4. It is open to members of the College of less than five years' standing, or those seeking to qualify for the M.R.C.O.G. examination.

5. The research is to be done under the supervision of a fellow of the College or senior member of the medical staff attached to the hospital in which the work is being done.

6. (*a*) The fellow supervising the work is to report to the Australian Regional Council on the progress of the work every three months. (*b*) A report suitable for publication is to be submitted by the applicant within 18 months of being given the grant.

7. Acknowledgement should be made that the work has been done with the help of the Fotheringham Research Scholarship of the Royal College of Obstetricians and Gynæcologists.

World Medical Association.

TWELFTH GENERAL ASSEMBLY.

THE twelfth General Assembly of the World Medical Association will be held from August 15 to 20, 1958, at The Parliament House, Copenhagen, Denmark, under the patronage of His Majesty Frederick IX, King of Denmark.

The programme will include the following special topics: "Health Education of the Public", Dr. J. Van Lennep (Belgium), Dr. J. A. Bustamante (Cuba), Professor Tara Takemi (Japan), Dr. S. Wand (United Kingdom); "Problems of Doctors in Hospitals and Policlinics", Dr. Kalervo Ohela and Dr. Viljo Rantasalo (Finland); "The Health Team and the Challenge of World Unity", Dr. John Henderson (U.S.A.); "Nuclear Radiation and the Health Education of the Public", Dr. Louis M. Orr (U.S.A.).

The scientific programme will include the following: "The Danish Programme of Cancer Control and Eradication", Professor Dr. E. Meulengracht, President, Danish Anti-Cancer Association; "Treatment to Reduce Mortality from Toxic Effects of Soporific Drugs", Dr. Carl Clemmesen, Chief, Psychiatric Department, Bispebjerg Municipal Hospital, Copenhagen; "Permanent Sequela from Malnutrition", Dr. Jørn Hess Thaysen, Medical Department A, Rigshospitalet, Copenhagen.

At the medical editors' meeting the topic will be "Medical Publications as a Responsibility of the Medical Associations". The speakers will include Professor M. Fog, Dr. K. H. Backer and Professor P. Bonnevie (Denmark).

An international film exhibition will also be held, with the presentation of outstanding medical motion pictures produced in many parts of the world. The producers, in many cases, will be present to introduce their pictures. These will include Dr. Lawrence Abel (England) and Dr. Malcolm Hill (U.S.A.).

Delegations from the majority of the 53 member medical associations are expected to attend the twelfth General Assembly. In addition, there will be representatives present from numerous international organizations having interests in the field of health.

Post-Graduate Work.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

Hospital Residents' Bureau and Counselling Centre for Recent Graduates.

THE Post-Graduate Committee has decided to institute a Hospital Residents' Bureau with the object of studying the special problems of the young graduate, advancing the educational aspect of hospital residencies and offering counsel and information to resident medical officers and others in respect to further training and educational opportunities. Work is proceeding on the compilation of a suitable brochure setting out this information.

The Committee is also arranging a course entitled "Planning the Future" especially directed to recent graduates. This will deal not only with the educational problems of the recent graduate, but also his economic and professional problems. For the aspects other than educational, the Committee has enlisted the assistance of the New South Wales Branch of the British Medical Association and others. The programme will begin with a meeting on Monday, July 21, at 8.15 p.m., to be held in the Maitland Lecture Theatre, Sydney Hospital. This meeting will consist of a panel discussion and the subject will be "Planning the Future".

The panel will comprise authorities on post-graduate medical education, medical practice and other aspects of careers in medicine. The monitors will be resident medical officers from six hospitals who will represent the different interests and aspirations of recent graduates. All resident

medical officers and recent graduates are invited to attend free of charge.

Further advice may be obtained on application to the Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney. Telephones: BU 4497-8.

Annual Subscription Course.

Pfizer Lecturer, 1958.

The Post-Graduate Committee has received a grant from Pfizer Proprietary, Limited, to enable them to invite to Australia a leading physician from the United States each year for the next three years to visit all States of Australia. The invitation for 1958 has been accepted by Professor Maxwell M. Wintrobe, Professor and Head of the Department of Internal Medicine at the University of Utah College of Medicine, Salt Lake City, Utah. Professor Wintrobe will visit Sydney from July 12 to 20. His programme will be as follows:

Monday, July 14, at 8.15 p.m., in the Stawell Hall, 145 Macquarie Street: "Leukæmias and Allied Disorders."

Wednesday, July 16, at 12 noon, in the Maitland Lecture Theatre, Sydney Hospital: "Lymph Node Disorders and Hodgkin's Disease."

Thursday, July 17, at 1.15 p.m., in the New South Wales Red Cross Blood Transfusion Service, 1 York Street: "The Refractory Anæmias."

Thursday, July 17, at 8.15 p.m., in the Stawell Hall, 145 Macquarie Street: "The Anæmias: Their Pathogenesis and Management."

Friday, July 18, at 1.15 p.m., in the Scot Skirving Lecture Theatre, Royal Prince Alfred Hospital: "Blood Formation, Blood Destruction, the Spleen and Splenectomy."

Naval, Military and Air Force.

APPOINTMENTS.

THE following appointments, changes, etc., are published in the *Commonwealth of Australia Gazette*, No. 31, of May 29, 1958.

ROYAL AUSTRALIAN AIR FORCE.

Permanent Air Force.

Medical Branch.

Henri Andre Stoksik (0218929) is appointed to a temporary commission, 1st January, 1958, with the rank of Pilot Officer (Student).

The probationary appointment of the following Flight Lieutenants is confirmed: D. T. Burke (0218197), W. I. Stuart (0310760).

The following are appointed to a temporary commission, 1st January, 1958, with the rank of Pilot Officer (Student): Glen William Reed (0115713), Robert Pierce Gower (043259), Conway Peter Goldfinch (043260).

The probationary appointment of Flight Lieutenant T. J. Gardner (0218191) is confirmed.

Squadron Leader A. S. Tredinnick (021945) is transferred to the Reserve, 23rd September, 1957, on reaching the age for retirement.

Notice.

NORTH QUEENSLAND MEDICAL CONFERENCE, 1958.

THE third North Queensland Medical Conference will be held in Mackay from Monday to Friday, September 22 to 26, 1958. The programme will be as follows.

Monday, September 22: 9.30 a.m., "Principles of Treatment of Common Dermatoses", Dr. I. O. Stahle; 10 a.m., "The Eczemas and Their Treatment", Dr. C. Petherbridge; 11.15 a.m., "The National Health Service", the Honourable the Minister for Health, Dr. D. Cameron, Dr. Metcalfe, Dr. Dowling; 2.15 p.m., "Methods of Treating Otorrhœa, and Some Common Diseases of the External Ear", Dr. R. Palmerston-Rundle; 3 p.m., "The Red Eye", Dr. L. Lowth; 4 p.m., "Some Asjects of Vertigo", Dr. W. A. Hopkins.

Tuesday, September 23: 9.15 a.m., "Radiation Hazards of Diagnostic X Rays", Dr. Alice Stewart; 10.30 a.m., "Clinical Illustrations and Reports of Late Radiation Effects", Dr. A. G. S. Cooper; 11.15 a.m., "Measurement of Radiation Hazards from a Physicist's Viewpoint", Mr. D. J. Stevens; 2.15 p.m., "Methods of Protection Against X Rays", Dr. J. F. Gillogley; 3 p.m., quiz panel; 4 p.m., "Methods of Research in Social Medicine", Dr. Alice Stewart.

Wednesday, September 24: 9.30 a.m., "New Thoughts on Obstetrical Hæmorrhage", Professor G. Shedden Adam; 11.15 a.m., "Pelvic Repair", Dr. C. J. Murphy; 12.10 p.m., "Some Experiences in Obstetrics in Mackay", Dr. P. W. Hopkins. Free afternoon.

Thursday, September 25: 9.15 a.m., "Heart Turns", Sir Alexander Murphy; 10.30 a.m., "Hæmoptysis", Dr. E. Silberstern; "The Future Incidence of Lung Cancer", Dr. T. G. Paxon; "Emphysema", Dr. R. A. Douglas; 2.15 p.m., "Preventive Medicine in Pædiatrics", Dr. I. Brody; 3.15 p.m., "Allergies in Childhood", Dr. P. A. Earnshaw; 4.15 p.m., "Keratoacanthoma", Dr. W. R. Horsfall; 4.45 p.m., "Fluothane", Dr. W. H. J. Cole.

Friday, September 26: 9.15 a.m., "Small Bowel Dyspepsia", Dr. K. J. J. Dorney; 10.30 a.m., "Diseases of the Biliary Tract and Pancreas", Dr. L. I. Burt, Dr. I. A. Lester, Dr. B. Cavaye; 2.15 p.m., "Carpal Tunnel Syndrome", Dr. G. A. Douglas; 3.15 p.m., "The Crippled Child", Dr. U. Ley.

Notes and News.

Children's Medical Research Foundation in N.S.W.

AT a public meeting held in Sydney on June 19, 1958, presided over by the Lord Mayor of Sydney, it was decided to establish a Children's Medical Research Foundation at the Royal Alexandra Hospital for Children. An appeal committee was constituted. The Patron is His Excellency the Governor of N.S.W., the Vice-Patron is Sir Charles Bickerton Blackburn, and the President is Sir John Northcott. The chairman of the executive committee is Professor Lorimer Dods, with Mr. D. S. I. Burrows as honorary secretary and Mr. J. W. Dunlop as honorary treasurer. A public appeal for funds will be launched in the last week in August. All donations should be sent to Mr. D. S. I. Burrows, Box 2040, G.P.O., Sydney (telephone: BU 1951).

Child Growth Study.

MR. COLIN SYME, Chairman of the Nuffield Foundation Australian Advisory Committee, has announced that the Foundation has made a grant of £1500 per annum for two years to Professor Sydney Sunderland, of the Anatomy Department of the University of Melbourne, for its Child Growth Study. This money will be used to continue the work of Dr. A. F. Roche, who has been conducting a programme of research in child growth for the past three years. For the purpose of this investigation into human physical growth processes three groups of Melbourne children have been enrolled: 120 normal children, 160 mongoloid children, and 25 children whose increase in height is unsatisfactory.

The study of the normal children includes frequent regular examinations by a pædiatrician, a dentist and an orthodontist. In addition to dietary and psychological assessments, the children are measured and their growth is studied by means of standardized photographs and carefully controlled X rays. These normal studies are considered essential because knowledge of child growth is very incomplete and because the few satisfactory standards that are available must be tested on normal local children before they can be used to assess accurately other local children whose growth is defective.

With the cooperation of the Mental Hygiene Authority, mongoloid children are being referred to the Child Growth Study for an appraisal of their physical characteristics. Despite the fact that this common disease has been recognized for almost 100 years, the physical changes in such children have not been recorded accurately. It is considered that an appreciation of these changes, considered in relation to post-operative findings in animal experiments, might help to determine the cause of this disease. In addition, it is clear that if drugs become available for the treatment of this condition, their effects on physical growth cannot be estimated accurately unless the physical characteristics of untreated individuals with this condition have been carefully recorded.

Recently pædiatricians at the Royal Children's Hospital have been referring children who are short in stature for their age to the Child Growth Study for regular assessments. The recorded measurements of these children are assessed whenever possible by comparison with data on normal local children, and special attention is paid to the maturity of their bones. Children of the same age vary in this maturity, and a delay can be responsible for a shortness of stature during childhood, even though average adult height will be achieved by such individuals.

Much of the work being done in the study requires frequent examinations of the same children so that their progress can be assessed in relation to their diet and health. In addition, the nature of some of the changes observed can be determined with certainty only when a complete sequence in the one individual is available for study.

Enzymes of the Endocrine Glands.

THE Australian Advisory Committee of the Nuffield Foundation has made a further grant of £750 to Professor V. M. Trikojus, of the Department of Biochemistry of the University of Melbourne, to continue his investigations on the enzymes of the endocrine glands.

International Congress on Occupational Health.

THE thirteenth International Congress on Occupational Health will be held in New York City during July, 1960. The theme of the 1960 congress will be prevention, rather than cure, of occupational injury and disease. Dr. Leo Wade, chairman of the organizing committee for the congress, states that delegates from more than 40 countries will attend, and that participants will report on their experiences, the findings of both clinical and laboratory research, and on methods for the control of occupational health hazards.

The New York meeting will be the first time that this congress has met in the western hemisphere. All earlier meetings were held in Europe, the first one in Milan in 1906. The last previous congress was held in Helsinki in 1957.

These congresses are sponsored by the Permanent Committee and International Association on Occupational Health, of which Dr. Sven Forssman, of Stockholm, is president and Dr. Enrico Vigliani, of Milan, is secretary.

Prizes for Medico-Surgical Films.

AT the conclusion of the public meeting held on March 25, 1958, by *La Presse Médicale* at the new Faculty of Medicine in Paris for the award of prizes for medico-surgical films, Professor Cathala announced the results as follows:

Prize for medical films: "The Psychiatric Hospital as a Centre for Treatment and Readaptation", a film produced at the *Hôpital psychiatrique du Vinatier de Lyon.*

Prize for surgical films: M. Portmann and G. Claverie, of Bordeaux, for their film "Mobilization of the Stapes as Treatment of Otospongiosis".

Prize for physiological films: B. Vallancien, of Paris, for his film "The Larynx and its Phonatory Function".

Cups were awarded to the producers of other films as follows: E. Cherigie ("Diverticulum of the Heart"); J. Hamburger, J. Crosnier and J. L. Funck-Brentano ("Useful Gestures and Dangerous Gestures in the Treatment of Acute Anuria"); H. Milhiet and P. Jager ("Transpericardial Ligature of the Pulmonary Vessels"); P. Padovani and Cl. Nicoletis ("Arthroplasty of Hip with Skin"); J. Teinturier ("Phenoplasty with Nylon Netting for Left Diaphragmatic Eventration").

The Medico-Legal Society of Victoria: The Stewart Macarthur Prize.

THE Stewart MacArthur Prize is awarded in each alternate year for the best essay submitted on a subject of medico-legal interest. The conditions of entry for the 1958 prize are as follows:

1. The prize shall be of fifty pounds and shall be open for competition in the year 1940 and thereafter in each alternate year.

2. The prize shall be open to undergraduates taking courses in law or medicine at any Australian university and to articled law clerks resident in Australia and to legally qualified medical or legal practitioners resident in Australia.

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED JUNE 14, 1958.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	2(1)	4(4)	9(3)	..	1	..	..	..	16
Amœbiasis	..	..	..	1(1)	..	..	..	..	1
Ancylostomiasis	1	..	3	..	..	..	3	..	7
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	..	2(1)	..	..	..	..	..	..	2
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	..	..	..	..	..	..	..	..	..
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	..	3(3)	4	..	..	..	1	..	8
Diphtheria	..	1(1)	..	..	..	..	..	..	1
Dysentery (Bacillary)	..	5(2)	..	1(1)	1(1)	..	4	..	11
Encephalitis	..	..	..	1	..	..	..	..	1
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	..	..	..	..	..	1(1)	..	..	1
Infective Hepatitis	53(24)	17(15)	8	5(3)	2(1)	2	2	1	90
Lead Poisoning	..	..	..	..	..	..	..	..	..
Leprosy	..	..	..	..	..	..	1	..	1
Leptospirosis	1	..	..	..	..	..	..	..	1
Malaria	..	..	2[2]	..	..	..	..	..	2[2]
Meningococcal Infection	3(2)	..	1(1)	1	..	1(1)	..	..	6
Ophthalmia	..	..	..	..	..	..	..	..	..
Ornithosis	..	..	..	..	..	..	..	..	..
Paratyphoid	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	..	..	1	2	..	..	..	..	3
Puerperal Fever	..	..	2	..	..	..	..	..	2
Rubella	..	7(6)	..	4(1)	18(18)	1(1)	..	..	30
Salmonella Infection	..	..	..	4(4)	..	..	..	..	4
Scarlet Fever	28(9)	12(11)	1	5(2)	18(13)	..	..	..	64
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	..	..	1	..	..	..	..	..	1
Trachoma	..	..	..	..	..	..	4	..	4
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	28(24)	11(11)	12(8)	2(1)	3(1)	5	1	..	62
Typhoid Fever	1(1)	..	..	..	..	..	..	..	1
Typhus (Flea-, Mite- and Tick-borne)	..	..	..	..	1(1)	..	..	..	1
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

[2] Source of infection outside Australia.

3. Each essay submitted shall be upon a subject of medico-legal interest which shall be selected by the candidate.

4. An essay in collaboration between a medical and a legal candidate may be submitted, and in the event of such an essay being awarded the prize, the prize shall be divided between the authors.

5. All essays submitted shall become the property of the Medico-Legal Society of Victoria, which may, at the discretion of the committee, publish any of them in the Proceedings of the Society or otherwise deal with them as the committee may think fit.

6. Entries for the prize must be submitted to the secretaries of the Society on or before December 31, 1958. The committee of the Society may extend the time for entry in particular cases if it sees fit.

7. Examiners will be appointed by the committee of the Society.

8. The prize shall not be awarded if either the examiners or the committee of the Society think that the standard of the essay or essays submitted is not sufficiently high to justify the award of the prize.

Further information may be obtained from the Honorary Secretary, The Medico-Legal Society of Victoria, Selbourne Chambers, Chancery Lane, Melbourne, C.1.

University of Melbourne: Visiting Professor of Obstetrics and Gynæcology.

THE Council of the University of Melbourne has appointed Professor J. L. McKelvey as the first Visiting Professor of Obstetrics and Gynæcology. Professor McKelvey is Professor of Obstetrics and Gynæcology at the University of Minnesota and a leader of the specialities in the United States of America. He will spend the month of August in Melbourne, and during his stay in Australia he will visit Perth and Sydney. As well, he will visit New Zealand for two weeks.

Quarantine Proclamation: Cholera.

IN a proclamation in the *Commonwealth of Australia Gazette*, No. 34, of June 19, 1958, in terms of the *Quarantine Act*, 1908-1950, it is declared that a quarantinable disease, namely, cholera, may be brought or carried from or through Thailand.

The practical effect of this is that all persons arriving in Australia from Thailand must produce a certificate of vaccination against cholera.

Pfizer Travelling Fellowship in Clinical Medicine.

ON the recommendation of the Council of The Royal Australasian College of Physicians, Dr. H. B. Kay, of Melbourne, has been awarded the Pfizer Travelling Fellowship in Clinical Medicine (Australia) for 1958.

Honours.

BIRTHDAY HONOURS.

IN addition to those mentioned in the issue of June 21 as having been included in the Birthday Honours, Dr. Stanley Augustine McDonnell, of Queensland, has been created an Officer of the Most Excellent Order of the British Empire (Civil Division).

Nominations and Elections.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Anthony, Michael, M.B., B.S., 1957 (Univ. Sydney), 19 Willis Street, Kingsford, New South Wales.

Pal, Andor, M.D., 1933 (Univ. Budapest) (registered in accordance with the provisions of Section 17 (1c) of the *Medical Practitioners Act*, 1938-1957), Flat 3, 116 Warners Avenue, Bondi, New South Wales.

Whiley, Warren, M.B., B.S., 1957 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown, New South Wales.

White, Kevin Hamilton, M.B., B.S., 1946 (Univ. Sydney), 464 Hunter Street, Newcastle, New South Wales.

The undermentioned have applied for election as members of the South Australian Branch of the British Medical Association:

Stokoe, Norman Leslie, M.B., Ch.B., 1945 (Univ. Edinburgh, D.O. (London, 1951, F.R.C.S. (Edinburgh), 1953, 163 North Terrace, Adelaide.

Fails, Mervyn James, M.B., B.S., 1958 (Univ. Adelaide), 29 Belmore Terrace, Woodville Park, South Australia.

The undermentioned have been elected as members of the South Australian Branch of the British Medical Association: Opit, Louis Jonah, M.B., B.S., 1949 (Univ. Adelaide), F.R.C.S., F.R.A.C.S.; Skinner, Sandford Lloyd, M.B., B.S., 1957 (Univ. Adelaide); Wellby, Maurice Lindsay, M.B., B.S., 1957 (Univ. Adelaide).

Diary for the Month.

JULY 8.—New South Wales Branch, B.M.A.: Executive and Finance Committee; Organization and Science Committee.

JULY 10.—New South Wales Branch, B.M.A.: Public Relations Committee.

JULY 10.—Victorian Branch, B.M.A.: Deconstration at Anatomy Department.

JULY 11.—Queensland Branch, B.M.A.: Council Meeting.

JULY 11.—Tasmanian Branch, B.M.A.: Branch Council.

JULY 14.—Victorian Branch, B.M.A.: Finance, House and Library Subcommittee.

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MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales. Anti-Tuberculosis Association of New South Wales.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

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References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those adopted by the Quarterly Cumulative Index Medicus. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

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